

## SUBCHAPTER O—CERTAIN BULK DANGEROUS CARGOES

### PART 150—COMPATIBILITY OF CARGOES

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SOURCE: CGD 75-59, 45 FR 70263, Oct. 23, 1980, unless otherwise noted.

#### § 150.105 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection and record-keeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR part or section where identified or described	Current OMB control No.
§ 150.01-15 .....	1625-0007
§ 153.5 .....	1625-0007
§ 153.905 .....	1625-0094
§ 153.910 .....	1625-0094
§ 153.968 .....	1625-0094
Part 154 .....	1625-0029
§ 154.12 .....	1625-0007

[49 FR 38121, Sept. 27, 1984, as amended by CGD 77-069, 52 FR 31626, Aug. 21, 1987; USCG-2004-18884, 69 FR 58349, Sept. 30, 2004]

#### § 150.110 Applicability.

This subpart prescribes rules for identifying incompatible hazardous materials and rules for carrying these materials in bulk as cargo in permanently attached tanks or in tanks that are loaded or discharged while aboard the vessel. The rules apply to all vessels that carry liquid dangerous cargoes in bulk that are subject to 46 U.S.C. Chapter 37.

[CGD 95-028, 62 FR 51209, Sept. 30, 1997]

#### § 150.115 Definitions.

As used in this subpart: *Hazardous material* means:

(a) A flammable liquid as defined in § 30.10-22 or a combustible liquid as defined in § 30.10-15 of this chapter;

(b) A material listed in Table 151.05, Table 1 of part 153, or Table 4 of part 154 of this chapter; or

(c) A liquid, liquefied gas, or compressed gas listed in 49 CFR 172.101.

*Person in charge* means the master of a self-propelled vessel, or the person in charge of a barge.

#### § 150.120 Definition of incompatible cargoes.

Except as described in § 150.150, a cargo of hazardous material is incompatible with another cargo listed in Table I if the chemical groups of the two cargoes have an “X” where their columns intersect in Figure 1 and are not shown as exceptions in Appendix I. (See also § 150.140.)

[CGD 83-047, 50 FR 33038, Aug. 16, 1985]

## **§ 150.130**

### **§ 150.130 Loading a cargo on vessels carrying cargoes with which it is incompatible.**

Except as described in § 150.160, the person in charge of a vessel shall ensure that the containment system for a cargo that is a hazardous material meets the following requirements:

(a) The containment system must separate the hazardous material or its residue from any cargo in table I with which it is incompatible by two barriers such as formed by a:

- (1) Cofferdam;
- (2) Empty tank;
- (3) Void space;
- (4) Cargo handling space;
- (5) Tank containing a compatible cargo; or

(6) Piping tunnel.

(b) In this subpart, isolation across a cruciform joint is equivalent to isolation by two barriers.

(c) The containment system for the hazardous material must not have a piping or venting system that connects to a containment system carrying a cargo with which the hazardous material is incompatible. Any such piping or venting system must have been separated from the containment system carrying the incompatible cargo by:

(1) Removing a valve or spool piece and blanking off the exposed pipe ends, or

(2) Installing two spectacle flanges in series with a means of detecting leakage into the pipe between the spectacle flanges.

### **§ 150.140 Cargoes not listed in Table I or II.**

A cargo of hazardous material not listed in Table I or II must be handled as if incompatible with all other cargoes until the Commandant (G-MSO) (tel. no. (202) 372-1425) assigns the hazardous material to a compatibility group. (Table I lists cargoes alphabetically while Table II lists cargoes by compatibility group).

[CGD 83-047, 50 FR 33038, Aug. 16, 1985, CGD 86-100, 52 FR 21037, June 4, 1987; CGD 95-072, 60 FR 50465, Sept. 29, 1995; CGD 96-041, 61 FR 50731, Sept. 27, 1996; USCG-2006-25697, 71 FR 55746, Sept. 25, 2006]

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### **§ 150.150 Exceptions to the compatibility chart.**

The Commandant (G-MSO) authorizes, on a case by case basis, exceptions to the rules in this subpart under the following conditions:

(a) When two cargoes shown to be incompatible in Figure 1 meet the standards for a compatible pair in Appendix III, or

(b) When two cargoes shown to be compatible in Figure 1 meet the standards for an incompatible pair in Appendix III.

Appendix I contains cargoes which have been found to be exceptions to Figure 1, the Compatibility Chart.

[CGD 83-047, 50 FR 33038, Aug. 16, 1985, as amended at CGD 95-072, 60 FR 50465, Sept. 29, 1995; CGD 96-041, 61 FR 50731, Sept. 27, 1996]

### **§ 150.160 Carrying a cargo as an exception to the compatibility chart.**

The Operator of a vessel having on board a cargo carried as an exception under § 150.150 but not listed in Appendix I, Exceptions to the Chart, shall make sure that:

(a) The Commandant (G-MSO) has authorized by letter or message the cargo pair as an exception to the compatibility chart; and

(b) A copy of the letter or message is on the vessel.

[CGD 75-59, 45 FR 70263, Oct. 23, 1980, as amended by CGD 82-063b, 48 FR 4781, Feb. 3, 1983; CGD 83-047, 50 FR 33038, Aug. 16, 1985; CGD 95-072, 60 FR 50465, Sept. 29, 1995; CGD 96-041, 61 FR 50731, Sept. 27, 1996]

### **§ 150.170 Right of appeal.**

Any person directly affected by a decision or action taken under this part, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

[CGD 88-033, 54 FR 50381, Dec. 6, 1989]

**Coast Guard, DHS**

**Pt. 150, Table I**

FIGURE 1 TO PART 150—COMPATIBILITY CHART

Figure I - Compatibility chart

CARGO COMPATIBILITY	REACTIVE GROUPS																					
	1. NON-OXIDIZING MINERAL ACIDS	2. SULFURIC ACID	3. NITRIC ACID	4. ORGANIC ACIDS	5. CAUSTICS	6. AMMONIA	7. ALIPHATIC AMINES	8. ALKANOLAMINES	9. AROMATIC AMINES	10. AMIDES	11. ORGANIC ANHYDRIDES	12. ISOCYANATES	13. VINYL ACETATE	14. ACRYLATES	15. SUBSTITUTED ALLYLS	16. ALKYLENE OXIDES	17. EPICHLOROHYDRIN	18. KETONES	19. ALDEHYDES	20. ALCOHOLS, GLYCOLS	21. PHENOLS, CRESOLS	22. CAPROLACTAM SOLUTION
1. NON-OXIDIZING MINERAL ACIDS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2. SULFURIC ACID	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3. NITRIC ACID	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4. ORGANIC ACIDS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5. CAUSTICS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6. AMMONIA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7. ALIPHATIC AMINES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8. ALKANOLAMINES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9. AROMATIC AMINES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10. AMIDES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11. ORGANIC ANHYDRIDES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12. ISOCYANATES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13. VINYL ACETATE	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14. ACRYLATES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15. SUBSTITUTED ALLYLS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16. ALKYLENE OXIDES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17. EPICHLOROHYDRIN	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18. KETONES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19. ALDEHYDES	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20. ALCOHOLS, GLYCOLS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21. PHENOLS, CRESOLS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22. CAPROLACTAM SOLUTION	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
30. OLEFINS	x	x																				
31. PARAFFINS																						
32. AROMATIC HYDROCARBONS	x																					
33. MISCELLANEOUS HYDROCARBON MIXTURES	x																					
34. ESTERS	x	x																				
35. VINYL HALIDES	x																					
36. HALOGENATED HYDROCARBONS																						
37. NITRILES	x																					
38. CARBON DISULFIDE																						
39. SULFOLANE																						
40. GLYCOL ETHERS	x																					
41. ETHERS	x	x																				
42. NITROCOMPOUNDS	x																					
43. MISCELLANEOUS WATER SOLUTIONS	x																					

TABLE I TO PART 150—ALPHABETICAL LIST OF CARGOES

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Acetaldehyde .....	19	.....	AAD	
Acetic acid .....	4	2	AAC	
Acetic anhydride .....	11	.....	ACA	
Acetochlor .....	10	.....	ACG	
Acetone .....	18	2	ACT	
Acetone cyanohydrin .....	0	1, 2	ACY	
Acetonitrile .....	37	.....	ATN	
Acetophenone .....	18	.....	ACP	
Acrolein .....	19	2	ARL	
Acrylamide solution .....	10	.....	AAM	
Acrylic acid .....	4	2	ACR	
Acrylonitrile .....	15	2	ACN	
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol .....	20	.....	ALE	
Adiponitrile .....	37	.....	ADN	
Alachlor .....	33	.....	ALH	
Alcohols (C13+) .....	20	.....	ALY	
<i>Including:</i>				
Oleyl alcohol (octadecenol)				
Pentadecanol				
Tallow alcohol				
Tetradecanol				
Tridecanol				
Alcoholic beverages .....	20	.....	APU/APV/APW/AET	
Alcohol polyethoxylates .....	20	.....		

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Alcohol polyethoxylates, secondary .....	20			
Alkanes (C6-C9) .....	31	1	ALK	AEA/AEB
<i>Including:</i>				
<i>Heptanes</i>				
<i>Hexanes</i>				
<i>Nonanes</i>				
<i>Octanes</i>				
n-Alkanes (C10+) .....	31	1	ALJ	
<i>Including:</i>				
<i>Decanes</i>				
<i>Dodecanes</i>				
<i>Heptadecanes</i>				
<i>Tridecanes</i>				
<i>Undecanes</i>				
iso- & cyclo-Alkanes (C10-C11) .....	31	1	AKI	
iso- & cyclo-Alkanes (C12+) .....	31	1	AKJ	
Alkane (C14-C17) sulfonic acid, sodium salt solution .....	34		AKA	
Alkaryl polyether (C9-C20) .....	41		AKP	
Alkenyl(C11+)-amide .....	11		AKM	
Alkenyl(C16-C20)succinic anhydride .....	11		AAH	
Alkyl acrylate-Vinyl pyridine copolymer in Toluene .....	32		AAP	
Alkyl(C8+)-amine, Alkenyl (C12+) acid ester mixture .....	34		AAA	
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomer). ....	34		APD	
Alkyl(C3-C4)-benzenes .....	32		AKC	
<i>Including:</i>				
<i>Butylbenzenes</i>				
<i>Cumene</i>				
<i>Propylbenzenes</i>				
Alkyl(C5-C8)-benzenes .....	32		AKD	
<i>Including:</i>				
<i>Amylbenzenes</i>				
<i>Heptylbenzenes</i>				
<i>Hexylbenzenes</i>				
<i>Octylbenzenes</i>				
Alkyl(C9+)-benzenes .....	32		AKB	
<i>Including:</i>				
<i>Decylbenzenes</i>				
<i>Dodecylbenzenes</i>				
<i>Nonylbenzenes</i>				
<i>Tetradecylbenzenes</i>				
<i>Tetrapropylbenzenes</i>				
<i>Tridecylbenzenes</i>				
<i>Undecylbenzenes</i>				
Alkylbenzene, Alkylin dane, Alkylin dene mixture (each C12-C17) .....	32	1, 2	AIH	ABS/ABN
Alkylbenzenesulfonic acid .....	0			
Alkylbenzenesulfonic acid, sodium salt solutions .....	33		ABT	
Alkyl dithiothiadiazole (C6-C24) .....	33		ADT	
Alkyl ester copolymer (C4-C20) .....	34		AES	
Alkyl(C7-C9) nitrates .....	34	2	AKN	ONE
Alkyl(C7-C11) phenol poly(4-12)ethoxylate .....	40		APN	
Alkyl(C8-C40) phenol sulfide .....	34		AKS	
Alkyl(C8-C9) phenylamine in aromatic solvents .....	9		ALP	
Alkyl(C9-C15) phenyl propoxylate .....	40			
Alkyl phthalates .....	34			
Alkyl(C10-C20, saturated and unsaturated) phosphite .....	34		AKL	AGL/AGN/AGO/AGP/AGM
Alkyl polyglucoside solutions .....	43			
Alkyl sulfonic acid ester of phenol .....	34			
Allyl alcohol .....	15	2	ALA	
Allyl chloride .....	15	1	ALC	
Aluminum chloride, Hydrochloric acid solution .....	0	1	AHS	
Aluminum sulfate solution .....	43	2	ASX	ALM
2-(2-Aminoethoxy)ethanol .....	8		AEX	
Aminoethyl diethanolamine, Aminoethyl ethanolamine solution .....	8			
Aminoethyl ethanolamine .....	8		AEE	
N-Aminoethylpiperazine .....	7		AEP	
2-Amino-2-hydroxymethyl-1,3-propanediol solution .....	43		AHL	
2-Amino-2-methyl-1-propanol .....	8		APQ	APR
Ammonia, anhydrous .....	6		AMA	
Ammonia, aqueous (28% or less Ammonia) ( <i>IMO cargo name</i> ), see Ammonium hydroxide. ....	6		AMH	
Ammonium bisulfite solution .....	43	2	ABX	ASU

**Coast Guard, DHS**

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Ammonium hydrogen phosphate solution .....	0	1	AMI	
Ammonium hydroxide (28% or less Ammonia) .....	6	.....	AMH	
Ammonium lignosulfonate solution, <i>see also</i> Lignin liquor .....	43	.....		
Ammonium nitrate solution .....	0	1	ANR	AND/AMN
Ammonium nitrate, Urea solution (containing Ammonia) .....	6	.....	UAS	
Ammonium nitrate, Urea solution (not containing Ammonia) .....	43	.....	ANU	UAT
Ammonium polyphosphate solution .....	43	.....	AMO	APP
Ammonium sulfate solution .....	43	.....	AME	AMS
Ammonium sulfide solution .....	5	.....	ASS	ASF
Ammonium thiocyanate, Ammonium thiosulfate solution .....	0	1	ACS	
Ammonium thiosulfate solution .....	43	.....	ATV	ATF
Amyl acetate .....	34	.....	AEC	IAT/AML/AAS/AYA
Amyl alcohol .....	20	.....	AAI	IAA/AAN/ASE/APM
<i>Amylene, see Pentene</i> .....	.....	.....	AMZ	PTX
<i>tert-Amyl methyl ether (see also, Methyl tert-pentyl ether)</i> .....	41	.....	AYE	
<i>Amyl methyl ketone, see Methyl amyl ketone</i> .....	.....	.....	AMK	MAK
Aniline .....	9	.....	ANL	
Animal and Fish oils, n.o.s. ....	34	.....	AFN	
<i>Including:</i>				
<i>Cod liver oil</i>				
<i>Lanolin</i>				
<i>Neatsfoot oil</i>				
<i>Pilchard oil</i>				
<i>Sperm oil</i>				
Animal and Fish acid oils and distillates, n.o.s. ....	34	.....	AFA	
<i>Including:</i>				
<i>Animal acid oil</i>				
<i>Fish acid oil</i>				
<i>Lard acid oil</i>				
<i>Mixed acid oil</i>				
<i>Mixed general acid oil</i>				
<i>Mixed hard acid oil</i>				
<i>Mixed soft acid oil</i>				
Anthracene oil (Coal tar fraction), <i>see</i> Coal tar .....	33	.....	AHO	COR
Apple juice .....	43	.....		
Aryl polyolefin (C11-C50) .....	30	.....	AYF	
Asphalt .....	33	.....	ASP	ACU
Asphalt blending stocks, roofers flux .....	33	.....	ARF	
Asphalt blending stocks, straight run residue .....	33	.....	ASR	
Asphalt emulsion ( <i>ORIMULSION</i> ) .....	33	.....	ASQ	
Aviation alkylates .....	33	.....	AVA	GAV
Barium long chain alkaryl(C11-C50) sulfonate .....	34	.....	BCA	
Barium long chain alkyl(C8-C14)phenate sulfide .....	34	.....	BCH	
Behenyl alcohol .....	20	.....		
Benzene .....	32	.....	BNZ	
Benzene hydrocarbon mixtures (having 10% Benzene or more) .....	32	.....	BHB	BHA
Benzenesulfonyl chloride .....	0	1, 2	BSC	
Benzene, Toluene, Xylene mixtures .....	32	2	BTX	
Benzene tricarboxylic acid, trioctyl ester .....	34	.....		
Benzylacetate .....	34	.....	BZE	
Benzyl alcohol .....	21	.....	BAL	
Benzyl chloride .....	36	.....	BCL	
Brake fluid base mixtures .....	20	.....	BFX	
Bromochloromethane .....	36	.....	BCM	
Butadiene .....	30	.....	BDI	
Butadiene, Butylene mixtures (cont. Acetylenes) .....	30	.....	BBM	
Butane .....	31	1	BMX	IBT/BUT
<i>1,4-Butanediol, see</i> Butylene glycol .....	.....	.....	BDO	BUG
<i>2-Butanone, see</i> Methyl ethyl ketone .....	.....	.....		IBL/BTN
<i>Butene, see</i> Butylene .....	.....	.....		
Butene oligomer .....	30	.....	BOL	
Butyl acetate .....	34	.....	BAX	IBA/BCN/BTA/BYA
Butyl acrylate .....	14	1	BAR	BAI/BTC
Butyl alcohol .....	20	2	BAY	IAL/BAN/BAS/BAT
Butylamine .....	7	.....	BTY	IAM/BAM/BTL/BUA
Butylbenzene, <i>see</i> Alky(C3-C4)benzenes .....	32	.....	BBE	AKC
Butyl benzyl phthalate .....	34	.....	BPH	
Butyl butyrate .....	34	.....	BBA	BUB/BIB
Butylene .....	30	.....	BTN	IBL
Butylene glycol .....	20	2	BUG	BDO
<i>1,3-Butylene glycol, see</i> Butylene glycol .....	.....	.....		BUG
Butylene oxide .....	16	1	BTO	
Butyl ether .....	41	.....	BTE	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Butyl formate .....	34 .....			BFI/BFN
Butyl heptyl ketone .....	18 .....		BHK	
Butyl methacrylate .....	14 .....	1	BMH	BMI/BMN
Butyl methacrylate, Decyl methacrylate, Cetyl-Eicosyl methacrylate mixture.	14 .....	1	DER	
<i>Butyl methyl ketone, see Methyl butyl ketone</i> .....	.....	.....		MBK
Butyl phenol, Formaldehyde resin in Xylene .....	32 .....			
n-Butyl propionate .....	34 .....		BPN	
Butyl stearate .....	34 .....			
Butyl toluene .....	32 .....		BUE	
Butyraldehyde .....	19 .....		BAE	BAD/BTR
Butyric acid .....	4 .....		BRA	IBR
gamma-Butyrolactone .....	0 .....	1, 2	BLA	
C9 Resinfeed (DSM) .....	32 .....	2	CNR	
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture .....	34 .....		CPX	
Calcium alkyl salicylate, <i>see also</i> Calcium long chain alkyl salicylate (C13+) .....	.....	.....		CAK
Calcium bromide solution, <i>see</i> Drilling brines .....	.....	.....		DRB
Calcium bromide, Zinc bromide solution, <i>see</i> Drilling brine (containing Zinc salts).	.....	.....		DZB
Calcium carbonate slurry .....	34 .....			
Calcium chloride solution .....	43 .....		CCS	CLC
Calcium hydroxide slurry .....	5 .....		COH	CHZ/CHU/CHY
Calcium hypochlorite solutions .....	5 .....			
Calcium lignosulfonate solution, <i>see also</i> Lignin liquor .....	43 .....			
Calcium long chain alkyl sulfonate (C11-C50) .....	34 .....		CAY	
Calcium long chain alkyl phenates .....	34 .....			CAN/CAW
Calcium long chain alkyl phenate sulfide (C8-C40) .....	34 .....		CPI	
Calcium long chain alkyl salicylate (C13+) .....	34 .....		CAK	
Calcium long chain alkyl phenolic amine (C8-C40) .....	9 .....		CPQ	
Calcium nitrate solution .....	34 .....		CNU	
Calcium nitrate, Magnesium nitrate, Potassium chloride solution .....	34 .....			
Calcium sulfonate, Calcium carbonate, Hydrocarbon solvent mixture .....	33 .....			
Camphor oil .....	18 .....		CPO	
<i>Canola oil, see rapeseed oil under "oils, edible."</i> .....	.....	.....		
Caprolactam solution .....	22 .....		CLS	
Caramel solutions .....	43 .....			
Carbolic oil .....	21 .....		CBO	
Carbon disulfide .....	38 .....		CBB	
Carbon tetrachloride .....	36 .....	2	CBT	
Cashew nut shell oil (untreated) .....	4 .....		OCN	
Catoxid feedstock .....	36 .....	2	CXF	
Caustic potash solution .....	5 .....	2	CPS	
Caustic soda solution .....	5 .....	2	CSS	
<i>Cetyl alcohol (hexadecanol), see Alcohols (C13+)</i> .....	.....	.....		ALY
Cetyl-Eicosyl methacrylate mixture .....	14 .....	1	CEM	ALY
<i>Cetyl-Stearyl alcohol, see Alcohols (C13+)</i> .....	.....	.....		
Chlorinated paraffins (C10-C13) .....	36 .....		CLH	
Chlorinated paraffins (C14-C17) (with 52% Chlorine) .....	36 .....		CLJ	
Chlorine .....	0 .....	1	CLX	
Chloroacetic acid solution .....	4 .....		CHM	CHL/MCA
Chlorobenzene .....	36 .....		CRB	
Chlorodifluoromethane ( <i>monochlorodifluoromethane</i> ) .....	36 .....		MCF	
Chloroform .....	36 .....		CRF	
Chlorhydrins .....	17 .....	1	CHD	
4-Chloro-2-methylphenoxyacetic acid, Dimethylamine salt solution .....	9 .....		CDM	
Chloronitrobenzene .....	42 .....		CNO	
1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one .....	18 .....	2	CDP	
Chloropropionic acid .....	4 .....		CPM	CLA/CLP
Chlorosulfonic acid .....	0 .....	1	CSA	
Chlorotoluene .....	36 .....		CHI	CTM/CTO/CRN
Choline chloride solutions .....	20 .....		CCO	
Citric acid .....	4 .....		CIS	CIT
Clay slurry, <i>see also</i> Kaolin clay slurry .....	43 .....			
Coal tar .....	33 .....		COR	OCT
Coal tar distillate .....	33 .....		CDL	
Coal tar, high temperature .....	33 .....		CHH	
Coal tar pitch .....	33 .....		CTP	
Cobalt naphthenate in solvent naphtha .....	34 .....		CNS	
Coconut oil, fatty acid .....	34 .....		CFA	
Copper salt of long chain (C17+) alcanoic acid .....	34 .....		CUS	CFT
Corn syrup .....	43 .....		CSY	
Cottonseed oil, fatty acid .....	34 .....		CFY	
Creosote .....	21 .....	2	CCT	CCW/CWD

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Cresols .....	21 .....		CRS	CRL/CSL/CSO
Cresylate spent caustic .....	5 .....		CSC	
Cresylic acid .....	21 .....		CRY	
Cresylic acid, dephenolized .....	21 .....		CAD	
Cresylic acid, sodium salt solution ( <i>IMO cargo name</i> ), see Cresylate spent caustic .....	5 .....			CSC
Cresylic acid tar .....	21 .....		CRX	
Crotonaldehyde .....	19 .....	2	CTA	
<i>Cumene (isopropyl benzene)</i> , see Propylbenzene .....	.....		CUM	PBY
1,5,9-Cyclododecatriene .....	30 .....		CYT	
Cycloheptane .....	31 .....	1	CYE	
Cyclohexane .....	31 .....	1	CHX	
Cyclohexanol .....	20 .....		CHN	
Cyclohexanone .....	18 .....		CCH	
Cyclohexanone, Cyclohexanol mixtures .....	18 .....	2	CYX	
Cyclohexyl acetate .....	34 .....		CYC	
Cyclohexylamine .....	7 .....		CHA	
1,3-Cyclopentadiene dimer .....	30 .....		CPD	DPT
Cyclopentadiene, Styrene, Benzene mixture .....	30 .....		CSB	
Cyclopentane .....	31 .....	1	CYP	
Cyclopentene .....	30 .....		CPE	
Cymene .....	32 .....		CMP	
Decahydronaphthalene .....	33 .....		DHN	
Decaldehyde .....	19 .....			IDA/DAL ALJ
<i>Decane</i> , see n-Alkanes (C10+) .....	.....		DCC	
Decanoic acid .....	4 .....		DCO	
Decene .....	30 .....		DCE	
Decyl acetate .....	34 .....		DYA	
Decyl acrylate .....	14 .....	1	DAT	IAI/DAR
Decyl alcohol .....	20 .....	2	DAX	ISA/DAN AKB
Decylbenzene, see Alkyl(C9+) benzenes .....	32 .....		DBZ	
Decyloxytetrahydro-thiophene dioxide .....	0 .....	1, 2	DHT	
Degummed C9 (DOW) .....	33 .....		DGC	
Dextrose solution, see Glucose solution .....	43 .....		DTS	GLU
Diacetone alcohol .....	20 .....	2	DAA	
Dialkyl(C10-C14) benzenes, see Alkyl(C9+) benzenes .....	32 .....		DAB	AKB
Dialkyl(C8-C9) diphenylamines .....	9 .....		DAQ	
Dialkyl(C7-C13) phthalates .....	34 .....		DAH	
<i>Including:</i>				
Diisodecyl phthalate .....				
Diisobutyl phthalate .....				
Dinonyl phthalate .....				
Ditridecyl phthalate .....				
Diundecyl phthalate .....				
Dibromomethane .....	36 .....		DBH	
Diethylamine .....	7 .....		DBA	
<i>Diethyl carbinol</i> , see Nonyl alcohol .....	.....		DHD	NNS
Diethyl hydrogen phosphonate .....	34 .....			
Diethylphenols .....	21 .....		DPA	DBT/DBV, DBW
Diethyl phthalate .....	34 .....		DBX	DBM/DBO/DBP
Dichlorobenzene .....	36 .....		DCD	DCB
3,4-Dichloro-1-butene .....	36 .....		DCF	
Dichlorodifluoromethane .....	36 .....		DCH	
1,1-Dichloroethane .....	36 .....		DEE	
2,2'-Dichloroethyl ether .....	41 .....		DHX	
1,6-Dichlorohexane .....	36 .....		DCI	
2,2'-Dichloroisopropyl ether .....	36 .....		DCM	
Dichloromethane .....	36 .....		DCP	
2,4-Dichlorophenol .....	21 .....		DDE	
2,4-Dichlorophenoxyacetic acid, Diethanolamine salt solution .....	43 .....		0 .....	DAD
2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution .....	0 .....	1, 2		DDA/DSX
2,4-Dichlorophenoxyacetic acid, Trisopropano-lamine salt solution .....	43 .....	2	DTI	
Dichloropropane .....	36 .....		DPX	DPB/DPP/DPC/DPL
1,3-Dichloropropene .....	15 .....	1	DPS	DPU/DPF
Dichloropropene, Dichloropropane mixtures .....	15 .....	1	DMX	
2,2-Dichloropropionic acid .....	4 .....		DCN	
Dicyclopentadiene, see also 1,3-Cyclopentadiene dimer .....	30 .....		DPT	CPD
Diethanolamine .....	8 .....		DEA	
<i>Diethanolamine salt of 2,4-Dichlorophenoxyacetic acid solution</i> , see 2,4-Dichlorophenoxyacetic acid, Diethanolamine salt solution .....	.....			DDE
Diethylamine .....	7 .....		DEN	
Diethylaminoethanol ( <i>IMO cargo name</i> ), see Diethylethanolamine .....	8 .....		DAE	
2,6-Diethylaniline .....	9 .....		DMN	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Diethylbenzene .....	32		DEB	
Diethylene glycol .....	40	2	DEG	
<i>Diethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i>	.....	.....	DME	PAG
<i>Diethylene glycol butyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.</i>	.....	.....	DEM	PAF
Diethylene glycol dibenzoate .....	34	.....	DGZ	
Diethylene glycol dibutyl ether .....	40	.....	DIG	
Diethylene glycol diethyl ether .....	40	.....	DGE	PAG
<i>Diethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether.</i>	.....	.....	DGA	PAF
<i>Diethylene glycol ethyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetates.</i>	.....	.....	DHE	PAG
<i>Diethylene glycol n-hexyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i>	.....	.....	DGM	PAG
<i>Diethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i>	.....	.....	DGR	PAF
<i>Diethylene glycol methyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.</i>	.....	.....	DGP	
Diethylene glycol phenyl ether .....	40	.....	DGL	
Diethylene glycol phthalate .....	34	.....	DGO	PAG
<i>Diethylene glycol propyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i>	.....	.....	DET	
Diethylenetriamine .....	7	2	DAE	
Diethylenetriamine pentaacetic acid, pentasodium salt solution .....	43	.....	EET	
Diethylethanolamine .....	8	.....	DAX	
Diethyl ether ( <i>IMO cargo name</i> ), see Ethyl ether .....	41	.....	DEH	
Diethyl hexanol, see Decyl alcohol .....	.....	.....	DEP	
Di-(2-ethylhexyl)adipate .....	34	.....	DIE	DOP
Di-(2-ethylhexyl)phosphoric acid .....	1	1	DPH	
Di-(2-ethylhexyl)phthalate, see Diocyl phthalate .....	34	.....	DSU	
Diethyl phthalate .....	34	.....	BDE	BPA
Diethyl sulfate .....	34	.....	DGF	
Diglycidyl ether of Bisphenol A .....	41	.....	DHP	
Diglycidyl ether of Bisphenol F .....	41	.....	DHA	
Diheptyl phthalate .....	34	.....	DIT	
Di-n-hexyl adipate .....	34	.....	DID	DAH
Dihexyl phthalate .....	34	.....	DNY	
1,4-Dihydro-9,10-dihydroxy anthracene, disodium salt solution .....	5	.....	DIN	DAH
Disobutylamine .....	7	.....	DIO	
Disobutyl carbinol ( <i>commercial cargo name</i> ), see Nonyl alcohol .....	20	.....	DIP	
Disobutylene .....	30	.....	DIA	
Disobutyl ketone .....	18	.....	DIX	
Disobutyl phthalate .....	34	.....	DIK	
<i>Diisodecyl phthalate, see Dialkyl(C7-C13) phthalates.</i> .....	.....	.....	DIT	
Diisonyl adipate .....	34	.....	DID	DAH
<i>Diisonyl phthalate, see Dialkyl(C7-C13) phthalates.</i> .....	.....	.....	DNY	
Diisoctyl phthalate .....	34	.....	DIN	DAH
Disopropanolamine .....	8	.....	DIO	
Disopropylamine .....	7	.....	DLS	
Disopropylbenzene .....	32	.....	DIP	
Disopropyl naphthalene .....	32	.....	DIA	
N,N-Dimethylacetamide .....	10	.....	DIX	
N,N-Dimethylacetamide solution .....	10	.....	DII	
Dimethyl adipate .....	34	.....	DAC	
Dimethylamine .....	7	.....	DLS	
Dimethylamine solution .....	7	.....	DLA	
Dimethylamine salt of 4-Chloro-2-methylphenoxyacetic acid solution, see 4-Chloro-2-methylphenoxyacetic acid, Dimethylamine salt solution. ....	.....	.....	DMA	
<i>Dimethylamine salt of 2,4-Dichlorophenoxyacetic acid solution, see 2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution.</i> .....	.....	.....	DMG/DMY/DMC	
Dimethylamine salt of 2,4-Dichlorophenoxyacetic acid solution, see 2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution. ....	.....	.....	CDM	
2,6-Dimethylaniline .....	9	.....	DAD/(DDA/DSX)	
<i>Dimethylbenzene, see Xylenes</i> .....	.....	.....	DMM	
Dimethylcyclisclooxane hydrolyzate .....	34	.....	XLX	
N,N-Dimethylcyclohexylamine .....	7	.....	DXN	
N,N-Dimethyldodecylamine ( <i>IMO cargo name</i> ), see Dodecyldimethylamine .....	7	.....	DDY	
Dimethyllethanolamine .....	8	.....	DMB	
Dimethylformamide .....	10	.....	DMF	
Dimethyl furan .....	41	.....	DGT	
Dimethyl glutarate .....	34	.....	DPI	
Dimethyl hydrogen phosphite .....	34	2	DNS	
Dimethyl naphthalene sulfonic acid, sodium salt solution .....	34	2	DMO	
Dimethyloctanoic acid .....	4	.....		

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Dimethyl phthalate .....	34		DTL	
Dimethylpolysiloxane, <i>see</i> Polydimethylsiloxane .....	34		DMP	
2,2-Dimethylpropane-1,3-diol .....	20		DDI	
Dimethyl succinate .....	34		DSE	
Dinitrotoluene .....	42		DNM	DTT/DNL/DNU
<i>Dinonyl phthalate, see Dialkyl(C7-C13) phthalates</i> .....			DIF	DAH
Diethyl phthalate .....	34		DOP	DIE
1,4-Dioxane .....	41		DOX	
Dipentene .....	30		DPN	
Diphenyl .....	32		DIL	
Diphenylamine (molten) .....	9		DAG	DAM/LRM
Diphenylamines, alkylated .....	7		DAJ	
Diphenylamine, reaction product with 2,2,4-trimethylpentene .....	7		DAK	
Diphenyl, Diphenyl ether mixture .....	33		DDO	DTH
Diphenyl ether .....	41		DPE	
Diphenyl ether, Diphenyl phenyl ether mixture .....	41		DOB	
Diphenylmethane diisocyanate .....	12		DPM	
Diphenylol propane-Epichlorohydrin resins .....	0	1	DPR	
<i>Diphenyl oxide, see as diphenyl ether</i> .....				
Di-n-propylamine .....	7		DNA	
Dipropylene glycol .....	40		DPG	
<i>Dipropylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....			DBG	PAG
Dipropylene glycol dibenzoate .....	34		DGY	
<i>Dipropylene glycol methyl ether, see Poly (2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....			DPY	PAG
Distillates, flashed feed stocks .....	33		DFF	
Distillates, straight run .....	33		DSR	
Dithiocarbamate ester (C7-C35) .....	34		DHO	
Ditriacyl adipate .....	34			
<i>Ditridecyl phthalate, see Dialkyl(C7-C13) phthalates</i> .....			DTP	DAH
<i>Diundecyl phthalate, see Dialkyl(C7-C13) phthalates</i> .....			DUP	DAH
Dodecane .....	31	1	DOC	ALJ
tert-Dodecanethiol .....	0	2	DDL	
Dodecanol .....	20		DDN	LAL
Dodecene .....	30		DOZ	DDC/DOD
2-Dodecenylsuccinic acid, dipotassium salt solution .....	34		DSP	
Dodecyl alcohol ( <i>IMO cargo name</i> ), <i>see</i> Dodecanol .....			DDN	
Dodecylamine, Tetradecylamine mixture .....	7		DTA	
Dodecylbenzene, <i>see Alkyl(C9+)-benzenes</i> .....	32	2	DDB	AKB
Dodecylbenzenesulfonic acid .....	0	1, 2	DSA	
Dodecyldimethylamine, Tetradecylidemethylamine mixture .....	7		DOT	
Dodecyl diphenyl ether disulfonate solution .....	43		DOS	
Dodecyl hydroxypropyl sulfide .....	0	1	DOH	
Dodecyl methacrylate .....	14	1	DDM	
Dodecyl-Octadecyl methacrylate mixture .....	14	1	DOM	
Dodecyl-Pentadecyl methacrylate mixtures .....	14	1	DDP	
Dodecyl phenol .....	21		DOL	
Dodecyl xylene .....	32	2	DXY	
Drilling brine (containing Calcium, Potassium or Sodium salts) .....	43			DRB
Drilling brine (containing Zinc salts) .....	43		DZB	
Drilling mud (low toxicity) ( <i>if flammable or combustible</i> ) .....	33		DRM	
Drilling mud (low toxicity) ( <i>if non-flammable or non-combustible</i> ) .....	43		DRM	
Epichlorohydrin .....	17	1	EPC	
Epoxy resin .....	18			
<i>ETBE, see Ethyl tert-butyl ether</i> .....			EBE	
Ethane .....	31	1	ETH	
Ethanamine ( <i>monoethanolamine</i> ) .....	8		MEA	
<i>2-Ethoxyethanol, see Ethylene glycol monoalkyl ethers</i> .....			EEO	EGC
2-Ethoxyethyl acetate .....	34		EEA	
<i>Ethoxylated alcohols, C11-C15, see the alcohol poylethoxylates</i> .....				
Ethoxylated long chain (C16+) alkyloxyalkanamine .....	8		ELA	
Ethoxy triglycer .....	40		ETG	
Ethyl acetate .....	34		ETA	
Ethyl acetoacetate .....	34		EAA	
Ethyl acrylate .....	14	1	EAC	
Ethyl alcohol .....	20	2	EAL	
Ethylamine .....	7	2	EAM	
Ethylamine solution .....	7		EAN	
Ethyl amyl ketone .....	18		EAK	
Ethylbenzene .....	32		ETB	
Ethyl butanol .....	20		EBT	
N-Ethyl-n-butylamine .....	7		EBA	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Ethyl tert-butyl ether .....	41	2	EBE	
Ethyl butyrate .....	34	.....	EBR	
Ethyl chloride .....	36	.....	ECL	
Ethyl cyclohexane .....	31	1	ECY	
N-Ethylcyclohexylamine .....	7	.....	ECC	
Ethylene .....	30	.....	ETL	
Ethyleneamine EA 1302 .....	7	2	EMX	EDA
Ethylene carbonate .....	34	.....		
Ethylene chlorohydrin .....	20	.....	ECH	
Ethylene cyanohydrin .....	20	.....	ETC	
Ethylenediamine .....	7	2	EDA	EMX
Ethylenediaminetetraacetic acid, tetrasodium salt solution .....	43	.....	EDS	
Ethylene dibromide .....	36	.....	EDB	
Ethylene dichloride .....	36	.....	EDC	
Ethylene glycol .....	20	2	EGL	
Ethylene glycol acetate .....	34	.....	EGO	
Ethylene glycol butyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EGM	EGC
Ethylene glycol tert-butyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EGC	
Ethylene glycol butyl ether acetate .....	34	.....	EMA	
Ethylene glycol diacetate .....	34	.....	EGY	
Ethylene glycol dibutyl ether .....	40	.....	EGB	
Ethylene glycol ethyl ether, <i>see</i> Ethyl glycol monoalkyl ethers .....	.....	.....	EGE	EGC/EEO
Ethylene glycol ethyl ether acetate, <i>see</i> 2-Ethoxyethyl acetate .....	.....	.....	EGA	EEA
Ethylene glycol hexyl ether .....	40	.....	EGH	
Ethylene glycol isopropyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EGI	EGC
Ethylene glycol methyl butyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	40	.....	EMB	EGC
Ethylene glycol methyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EME	EGC
Ethylene glycol methyl ether acetate .....	34	.....	EGT	
Ethylene glycol monoalkyl ethers .....	40	.....	EGC	
<i>Including:</i>				
Ethylene glycol butyl ether .....				
Ethylene glycol isobutyl ether .....				
Ethylene glycol tert-butyl ether .....				
Ethylene glycol ethyl ether .....				
Ethylene glycol hexyl ether .....				
Ethylene glycol methyl ether .....				
Ethylene glycol propyl ether .....				
Ethylene glycol isopropyl ether .....				
Ethylene glycol phenyl ether .....	40	.....	EPE	
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture .....	40	.....	EDX	
Ethylene glycol propyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EGP	EGC
Ethylene glycol iso-propyl ether, <i>see</i> Ethylene glycol monoalkyl ethers .....	.....	.....	EGI	EGC
Ethylene oxide .....	0	1	EOX	
Ethylene oxide, Propylene oxide mixture .....	16	1	EPN	
Ethylene-Propylene copolymer .....	30	.....		
Ethylene-Vinyl acetate copolymer emulsion .....	43	.....		
Ethyl ether .....	41	.....	EET	
Ethyl-3-ethoxypropionate .....	34	.....	EEP	
2-Ethylhexaldehyde, <i>see</i> Octyl aldehydes .....	.....	.....	HA	OAL
2-Ethylhexanoic acid, <i>see</i> Octanoic acids .....	.....	.....	EHO	OAY
2-Ethylhexanol, <i>see</i> Octanol .....	.....	.....	EHX	OCX
2-Ethylhexyl acrylate .....	14	1	EAI	
2-Ethylhexylamine .....	7	.....	EHM	
Ethyl hexyl phthalate .....	34	.....	EHE	
Ethyl hexyl talate .....	34	.....	EHT	
2-Ethyl-1-(hydroxymethyl)propane-1,3-diol, C8-C10 ester .....	34	.....	EHD	
Ethyldene norbornene .....	30	2	ENB	
Ethyl methacrylate .....	14	1	ETM	
N-Ethylmethylallylamine .....	7	.....	EML	
2-Ethyl-6-methyl-N-(1'-methyl-2-methoxyethyl)aniline .....	9	.....	EEM	
o-Ethyl phenol .....	21	.....	EPL	
Ethyl propionate .....	34	.....	EPR	
2-Ethyl-3-propylacrolein .....	19	2	EPA	
Ethyl toluene .....	32	.....	ETE	
Fatty acids (saturated, C13+), <i>see</i> Fatty acids (saturated, C14+) .....	.....	.....		
Fatty acids (saturated, C14+) .....	34	.....	FAD	SRA
Ferric chloride solution .....	1	1	FCS	FCL
Ferric hydroxyethylmethylenediaminetriacetic acid, trisodium salt solution .....	43	2	FHX	STA
Ferric nitrate, Nitric acid solution .....	3	.....	FNN	
Fish solubles (water based fish meal extracts) .....	43	.....	FSO	
Fluorosilicic acid .....	1	1	FSJ	
Formaldehyde, Methanol mixtures .....	19	2	MTM	
Formaldehyde solution .....	19	2	FMS	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Formamide .....	10		FAM	
Formic acid .....	4	2	FMA	
Fructose solution .....	43			
Fumaric adduct of Rosin, water dispersion .....	43		FAR	
Furfural .....	19		FFA	
Furfuryl alcohol .....	20	2	FAL	
Gas oil, cracked .....	33		GOC	
Gasoline blending stock, alkylates .....	33		GAK	
Gasoline blending stock, reformates .....	33		GRF	
Gasolines:				
Automotive ( <i>not over 4.23 grams lead per gal.</i> ) .....	33		GAT	
Aviation ( <i>not over 4.86 grams lead per gal</i> ) .....	33		GAV	AVA
Casinghead ( <i>natural</i> ) .....	33		GCS	
Polymer .....	33		GPL	
Straight run .....	33		GSR	
Glucose solution .....	43		GLU	DTS
Glutaraldehyde solution .....	19		GTA	
Glycerine .....	20	2	GCR	
Glycerine, Dioxanedimethanol mixture .....	20		GDM	
Glycerol monooleate .....	20		GMO	
Glycerol polyalkoxylate .....	34			
Glycerol triacetate .....	34			
Glycidyl ester of C10 trialkyl acetic acid ( <i>IMO cargo name</i> ), <i>see</i> Glycidyl ester of tridecyl acetic acid .....	34		GLT	
Glycidyl ester of tridecylacetic acid .....	34		GLT	GLT
<i>Glycidyl ester of Versatic acid</i> , <i>see</i> Glycidyl ester of tridecylacetic acid .....	.....		GLT	
Glycine, sodium salt solution .....	7			
<i>Glycol diacetate</i> , <i>see</i> Ethylene glycol diacetate .....	.....		EGY	
Glycolic acid solution .....	4		GLC	
Glyoxal solutions .....	19		GOS	
Glyoxylic acid .....	4		GAC	
Glyphosate solution ( <i>not containing surfactant</i> ) ( <i>See also ROUNDUP</i> ) .....	7		GIO	
<i>Heptadecane</i> , <i>see</i> n-Alkanes (C10+) .....	.....		ALJ	
Heptane .....	31	1	HMX	ALK (HPI/HPT)
n-Heptanoic acid .....	4		HEP	
Heptanol .....	20		HTX	HTN
Heptene .....	30		HPX	HTE
Heptyl acetate .....	34		HPE	
<i>Herbicide (C15-H22-NO2-Cl)</i> , <i>see</i> Metolachlor .....	.....		MCO	
<i>Hexadecanol (cetyl alcohol)</i> , <i>see</i> Alcohols (C13+) .....	.....		ALY	
1-Hexadecynaphthalene, 1,4-bis(Hexadecyl)naphthalene mixture .....	32			
<i>Hexaethylene glycol</i> , <i>see</i> Polyethylene glycol .....	.....			
Hexamethylene glycol .....	20			
Hexamethylenediamine .....	7		HME	HMD/HMC
Hexamethylenediamine solution .....	7		HMC	HMD/HME
Hexamethylenediamine adipate solution .....	43		HAM	
Hexamethylene diisocyanate .....	12		HDI	
Hexamethylenetetramine .....	7		HMT	
Hexamethylenetetramine solutions .....	7		HTS	
Hexamethylenimine .....	7		HMI	
Hexane .....	31	2	HXS	ALK (IHA/HXA)
Hexanoic acid .....	4		HXO	
Hexanol .....	20		HXN	
Hexene .....	30		HEX	HXE/HXT/MPN/MTN
Hexyl acetate .....	34		HAE	HSA
Hexylene glycol .....	20		HGX	
HiTec 321 .....	7		HIT	
<i>Hog grease</i> , <i>see</i> Lard .....	.....			
Hydrochloric acid .....	1	1	HCL	
<i>Hydrofluorosilicic acid</i> , <i>see</i> Fluorosilicic acid .....	.....		HFS	FSJ
bis(Hydrogenated tallow alkyl)methyl amines .....	7		HTA	
Hydrogen peroxide solutions .....	0	1		HPN/HPS/HPO
2-Hydroxyethyl acrylate .....	14	2	HAI	
N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution .....	43		HET	FHX
N,N-bis(2-Hydroxyethyl) oleamide .....	10		HOO	
2-Hydroxy-4-(methylthio)butanoic acid .....	4		HBA	
Hydroxy terminated polybutadiene ( <i>IMO cargo name</i> ), <i>see</i> Polybutadiene, hydroxy terminated.	20			
<i>alpha-hydro-omega-Hydroxytetradeca(oxytetramethylene)</i> , <i>see</i> Poly(tetramethylene ether) glycols (mw 950-1050).	.....			HTO
Icosa(oxypropane-2,3-diy) .....	20		IOP	
Isophorone .....	18	2	IPH	
Isophorone diamine .....	7		IP1	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Isophorone diisocyanate .....	12 .....		IPD	
Isoprene .....	30 .....		IPR	
Isoprene concentrate (Shell) .....	30 .....		ISC	
<i>Isopropylbenzene (cumene), see Propylbenzene</i> .....	.....			PBY
Jet fuels:				
JP-4 .....	33 .....		JPF	
JP-5 .....	33 .....		JPV	
JP-8 .....	33 .....		JPE	
Kaolin clay slurry .....	43 .....			
Kerosene .....	33 .....		KRS	
Ketone residue .....	18 .....		KTR	
Kraft black liquor .....	5 .....			KPL
Kraft pulping liquors ( <i>Black, Green, or White</i> ) .....	5 .....		KPL	
Lactic acid .....	0 .....	1, 2	LTA	
Lactonitrile solution .....	37 .....		LNI	
Lard .....	34 .....			
Latex (ammonia inhibited) .....	30 .....		LTX	
Latex, liquid synthetic .....	43 .....		LLS	LTX
Lauric acid .....	34 .....		LRA	
<i>Lauryl polyglucose, see Alkyl(C12 -C14) polyglucoside solution (55% or less).</i> .....	.....		LAP	AGM
Lecithin .....	34 .....		LEC	
Lignin liquor .....	43 .....			
<i>Lignin sulfonic acid, sodium salt solution, see Sodium lignosulfonate solution.</i> .....	.....			
<i>d-Limonene, see Dipentene</i> .....	.....			
Liquid Streptomyces solubles .....	43 .....			
Long chain alkaryl polypolyether (C11-C20) .....	41 .....		LCP	
Long chain alkaryl sulfonic acid (C16-C60) .....	0 .....	1, 2	LCS	
Long chain alkylphenate/Phenol sulfide mixture .....	21 .....		LPS	
Long chain polyetheramine in alkyl(C2-C4)benzenes .....	7 .....		LCE	
I-Lysine solution .....	43 .....		LYS	
Magnesium chloride solution .....	0 .....	1, 2		
Magnesium hydroxide slurry .....	5 .....			
Magnesium long chain alkaryl sulfonate (C11-C50) .....	34 .....		MAS	MSE
Magnesium long chain alkyl phenate sulfide (C8-C20) .....	34 .....		MPS	
Magnesium long chain alkyl salicylate (C11+) .....	34 .....		MLS	
<i>Magnesium nonyl phenol sulfide, see Magnesium long chain alkyl phenate sulfide (C8-C20).</i> .....	.....		MPS	
<i>Magnesium sulfonate, see Magnesium long chain alkaryl sulfonate (C11-C50).</i> .....	.....		MSE	MAS
Maleic anhydride .....	11 .....		MLA	
Mercaptobenzothiazol, sodium salt solution ( <i>IMO cargo name</i> ), <i>see Sodium-2-mercaptobenzothiazol solution.</i> .....	5 .....		SMB	
Mesityl oxide .....	18 .....	2	MSO	
Metarni sodium solution .....	7 .....		MSS	SMD
Methacrylic acid .....	4 .....		MAD	
Methacrylic resin in Ethylene dichloride .....	14 .....	1	MRD	
Methacrylonitrile .....	15 .....	2	MET	
Methane .....	31 .....	1	MTH	
3-Methoxy-1-butanol .....	20 .....			
3-Methoxybutyl acetate .....	34 .....		MOA	
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide ( <i>IMO cargo name</i> ), <i>see Metolachlor.</i> .....	34 .....		MCO	
1-Methoxy-2-propyl acetate .....	34 .....		MPO	
<i>Methoxy triglycol</i> .....	40 .....		MTG	
Methyl acetate .....	34 .....		MTT	
Methyl acetoacetate .....	34 .....		MAE	
Methyl acetylene, Propadiene mixture .....	30 .....		MAP	
Methyl acrylate .....	14 .....	1	MAM	
Methyl alcohol .....	20 .....	2	MAL	
Methylamine solutions .....	7 .....		MSZ	
Methyl amyl acetate .....	34 .....		MAC	
Methyl amyl alcohol .....	20 .....		MAA	MIC
Methyl amyl ketone .....	18 .....		MAK	
Methyl bromide .....	36 .....		MTB	
<i>Methyl butanol, see the amyl alcohols</i> .....	.....		AAI	
Methyl butenol .....	20 .....		MBL	
<i>Methyl butenes (tert-amylenes), see Pentene</i> .....	.....		PTX	
Methyl tert-butyl ether .....	41 .....	2	MBE	
Methyl butyl ketone .....	18 .....	2	MBK	
<i>Methylbutynol, see 2-Methyl-2-hydroxy-3-butyne</i> .....	20 .....		MBY	MHB
3-Methyl butyraldehyde .....	19 .....			

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Methyl butyrate .....	34 .....		MBU	
Methyl chloride .....	36 .....		MTC	
Methylcyclohexane .....	31 .....	1	MCY	
Methylcyclopentadiene dimer .....	30 .....		MCK	
Methyl diethanolamine .....	8 .....		MDE	MAB DCM
<i>Methylene chloride, see Dichloromethane</i> .....	.....			
2-Methyl-6-ethylaniline .....	9 .....		MEN	
Methyl ethyl ketone .....	18 .....	2	MEK	
2-Methyl-5-ethylpyridine .....	9 .....		MEP	
Methyl formate .....	34 .....		MFM	
N-Methylglucamine solution .....	43 .....		MGC	
Methyl heptyl ketone .....	18 .....		MHK	
2-Methyl-2-hydroxy-3-butyne .....	20 .....		MHB	
Methyl isoamyl ketone .....	18 .....			MAK
<i>Methyl isobutyl carbinol, see Methyl amyl alcohol</i> .....	.....		MIC	MAA
Methyl isobutyl ketone .....	18 .....	2	MIK	
Methyl methacrylate .....	14 .....	1	MMM	
3-Methyl-3-methoxybutanol .....	20 .....			
3-Methyl-3-methoxybutyl acetate .....	34 .....			
Methyl naphthalene .....	32 .....		MNA	
Methylolureas .....	19 .....		MUS	
2-Methyl pentane .....	31 .....	1	IHA	
<i>2-Methyl-1-pentene, see Hexene</i> .....	.....		MPN	HEX
<i>4-Methyl-1-pentene, see Hexene</i> .....	.....		MTN	HEX
Methyl tert-pentyl ether ( <i>IMO cargo name</i> ), <i>see tert-Amyl methyl ether</i> .....	41 .....			AYE
2-Methyl-1,3-propanediol .....	20 .....		MDL	
Methyl propyl ketone .....	18 .....		MKE	
Methylpyridine .....	9 .....			MPR/MPE/MPF
N-Methyl-2-pyrrolidone .....	9 .....	2	MPY	
Methyl salicylate .....	34 .....		MES	
alpha-Methylstyrene .....	30 .....		MSR	
3-(Methylthio)propionaldehyde .....	19 .....		MTP	
Metolachlor .....	34 .....		MCO	
Milk .....	43 .....			
Mineral spirits .....	33 .....		MNS	
Molasses .....	20 .....			
Molasses residue .....	0 .....	1		
Monochlorodifluoromethane .....	36 .....		MCF	
<i>Monoethanolamine, see Ethanolamine</i> .....	.....			
<i>Monoisopropanolamine, see Propanolamine</i> .....	.....			
Morpholine .....	7 .....	2	MPL	
Motor fuel antiknock compounds containing lead alkyls .....	0 .....	1	MFA	
<i>MTBE, see Methyl tert-butyl ether</i> .....	.....			MBE
Myrcene .....	30 .....		MRE	
Naphtha:				
Aromatic .....	33 .....			
Coal tar solvent .....	33 .....		NCT	
Heavy .....	33 .....			
Paraffinic .....	33 .....			
Petroleum .....	33 .....		PTN	
Solvent .....	33 .....		NSV	
Stoddard solvent .....	33 .....		NSS	
Varnish Makers' and Painters' .....	33 .....		NVM	
Naphthalene .....	32 .....		NTM	
Naphthalene still residue .....	32 .....	2	NSR	
Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution ..	0 .....	1	NFS	
Naphthalene sulfonic acid, sodium salt solution .....	34 .....		NSA	
Naphthenic acid .....	4 .....		NTI	
Naphthenic acid, sodium salt solution .....	43 .....		NTS	
Neodecanoic acid .....	4 .....		NEA	
NIAX POLYOL APP 240C .....	0 .....	1, 2	NXP	
Nitrating acid .....	0 .....	1	NIA	
Nitric acid (70% or less) .....	3 .....		NCD	
Nitric acid (greater than 70%) .....	0 .....	1	NAC	
Nitrobenzene .....	42 .....		NTB	CNO
<i>o-Nitrochlorobenzene, see Chloronitrobenzene</i> .....	.....			
Nitroethane .....	42 .....		NTE	
Nitroethane, 1-Nitropropane mixtures .....	42 .....		NNO	
<i>o-Nitrophenol</i> .....	0 .....	1, 2	NTP	NIP/NPH
Nitropropane .....	42 .....		NPM	NPN/NPP
Nitropropane, Nitroethane mixture .....	42 .....			NNO (NNM/NNL)
Nitrotoluene .....	42 .....		NIT	NIE/NTT/NTR
Nonane .....	31 .....	1	NAX	ALK (NAN)

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Nonanoic acid .....	4 .....		NNA	NAI/NIN
Nonanoic, Tridecanoic acid mixture .....	4 .....		NAT	
Nonene .....	30 .....		NOO	NON/NNE
Nonyl acetate .....	34 .....		NAE	
Nonyl alcohol .....	20 .....	2	NNS	NNI/NNN/DBC AKB
<i>Nonylbenzene, see Alkyl(C9+)-benzenes</i> .....	.....			
Nonyl methacrylate .....	14 .....	1	NMA	
Nonyl phenol .....	21 .....		NNP	
Nonyl phenol poly(4+)ethoxylates .....	40 .....		NPE	
<i>Nonyl phenol sulfide solution, see Alkyl phenol sulfide (C8-C40)</i> .....	.....			AKS/NPS
Noxious Liquid Substance, n.o.s. (NLS's) .....	0 .....	1		
<i>1-Octadecene, see the olefin or alpha-olefin entries</i> .....	.....			
Octadecenoamide .....	10 .....		ODD	
<i>Octadecenol (oleyl alcohol), see Alcohols (C13+)</i> .....	.....			ALY
Octane .....	31 .....	1	OAX	ALK (IOO/OAN)
Octanoic acid .....	4 .....		OAY	OAA/EHO
Octanol .....	20 .....	2	OCX	IOA/OTA/EHX
Octene .....	30 .....		OTX	OTE
n-Octyl acetate .....	34 .....		OAF	OAE
<i>Octyl alcohol, see Octanol</i> .....	.....			OCX
Octyl aldehyde .....	19 .....		OAL	IOC/OLX/EHA
Octyl decyl adipate .....	34 .....		ODA	
<i>Octyl nitrate, see Alkyl(C7-C9) nitrates</i> .....	.....		ONE	AKN
Octyl phenol .....	21 .....			
<i>Octyl phthalate, see Diethyl phthalate</i> .....	.....			DOP
Oil, edible:				
Beechnut .....	34 .....		OBN	VEO
Castor .....	34 .....		OCA	VEO
Cocoa butter .....	34 .....		OCB	VEO
Coconut .....	34 .....	2	OCC	VEO
Cod liver .....	34 .....		OCL	AFN
Corn .....	34 .....		OCO	VEO
Cottonseed .....	34 .....		OCS	VEO
Fish .....	34 .....	2	OFS	AFN
Groundnut .....	34 .....		OGN	VEO
Hazelnut .....	34 .....		OHN	VEO
Lard .....	34 .....		OLD	AFN
Maize .....	34 .....			VEO (OCO)
Nutmeg butter .....	34 .....		ONB	VEO
Olive .....	34 .....		OOL	VEO
Palm .....	34 .....	2	OPM	VEO
Palm kernel .....	34 .....		OPO	VEO
Peanut .....	34 .....		OPN	VEO
Poppy .....	34 .....		OPY	VEO
Poppy seed .....	34 .....			VEO
Raisin seed .....	34 .....		ORA	VEO
Rapeseed .....	34 .....		ORP	VEO
Rice bran .....	34 .....		ORB	VEO
Safflower .....	34 .....		OSF	VEO
Salad .....	34 .....		OSL	VEO
Sesame .....	34 .....		OSS	VEO
Soya bean .....	34 .....		OSB	VEO
Sunflower seed .....	34 .....		OSN	VEO
Tucum .....	34 .....		OTC	VEO
Vegetable .....	34 .....		OVG	VEO
Walnut .....	34 .....		OWN	VEO
Oil, fuel:				
No. 1 .....	33 .....		OON	
No. 1-D .....	33 .....		OOD	
No. 2 .....	33 .....		OTW	
No. 2-D .....	33 .....		OTD	
No. 4 .....	33 .....		OFR	
No. 5 .....	33 .....		OFV	
No. 6 .....	33 .....		OSX	
Oil, misc:				
Aliphatic .....	33 .....			
Animal .....	34 .....		OMA	AFN
Aromatic .....	33 .....			
Clarified .....	33 .....		OCF	
Coal .....	33 .....			
Coconut oil, fatty acid methyl ester .....	34 .....		OCM	
Cotton seed oil, fatty acid .....	34 .....		CFY	
Crude .....	33 .....		OIL	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Diesel .....	33 .....		ODS	
Gas, high pour .....	33 .....			
Gas, low pour .....	33 .....			
Gas, low sulfur .....	33 .....			
Heartcut distillate .....	33 .....			
Lanolin .....	34 .....		OLL	AFN
Linseed .....	33 .....		OLS	
Lubricating .....	33 .....		OLB	
Mineral .....	33 .....		OMN	
Mineral seal .....	33 .....		OMS	
Motor .....	33 .....		OMT	
Neatsfoot .....	33 .....		ONF	AFN
Oiticica .....	34 .....		OOI	
Palm oil, fatty acid methyl ester .....	34 .....		OPE	
Penetrating .....	33 .....		OPT	
Perilla .....	34 .....		OPR	
Pilchard .....	34 .....		OPL	AFN
Pine .....	33 .....		OPI	PNL
Residual .....	33 .....			
Road .....	33 .....		ORD	
Rosin .....	33 .....		ORN	
Seal .....	34 .....			
Soapstock .....	34 .....		OIS	
Soybean (epoxidized) .....	34 .....			EVO
Sperm .....	33 .....		OSP	AFN
Spindle .....	33 .....		OSD	
Tall .....	34 .....		OTL	
Tall, fatty acid .....	34 .....	2	TOF	
Transformer .....	33 .....		OTF	
Tung .....	34 .....		OTG	
Turbine .....	33 .....		OTB	
Wood .....	34 .....			
Olefin/Akyl ester copolymer (molecular weight 2000+) .....	34 .....		OCP	
Olefin mixtures .....	30 .....			OFX/OFY
alpha-Olefins (C6-C18) mixtures .....	30 .....		OAM	
Olefins (C13+) .....	30 .....			
Olein acid .....	34 .....		OLA	
Oleum .....	0 .....	1, 2	OLM	
Oleyl alcohol ( <i>octadecenol</i> ), see Alcohols (C13+) .....				ALY
Oleylamine .....	7 .....		OLY	
ORIMULSION, see Asphalt emulsion .....				ASQ
Oxalkylated alkyl phenol formaldehyde .....	33 .....			
Palm kernel acid oil .....	34 .....		PNO	
Palm kernel acid oil, methyl ester .....	34 .....		PNF	
Palm kernel oil, fatty acid, see Palm kernel acid oil .....				PNO
Palm kernel oil, fatty acid methyl ester, see Palm kernel acid oil, methyl ester.				PNF
Palm stearin .....	34 .....		PMS	
n-Paraffins (C10-C20), see n-Alkanes (C10+) .....			PFN	ALJ
Paraldehyde .....	19 .....		PDH	
Paraldehyde-Ammonia reaction product .....	9 .....		PRB	
Pentachloroethane .....	36 .....		PCE	
Pentacosa(oxypropane-2,3-diy)s .....	20 .....		POY	
Pentadecanol, see Alcohols (C13+) .....			PDC	ALY
1,3-Pentadiene .....	30 .....		PDE	PDN
Pentaethylene glycol, see Polyethylene glycols .....				PAG
Pentaethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.				
Pentaethylenehexamine .....	7 .....		PEN	
Pentaethylenehexamine, Tetraethylpentamine mixture .....	7 .....		PEP	
Pentane .....	31 .....	1	PTY	IPT/PTA
Pentanoic acid .....	4 .....		POC	
n-Pentanoic acid, 2-Methyl butrylic acid mixture .....	4 .....		POJ	POC
Pentasodium salt of Diethylenetriamine pentaacetic acid solution, see Diethylenetriamine pentaacetic acid, pentasodium salt solution.				
Pentene .....	30 .....		PTX	PTE
Pentyl aldehyde .....	19 .....			
n-Pentyl propionate .....	34 .....		PPE	
Perchloroethylene .....	36 .....	2	PER	TTE
Petrolatum .....	33 .....		PTL	
Phenol .....	21 .....		PHN	
1-Phenyl-1-xylyl ethane .....	32 .....		PXE	
Phosphate esters, alkyl(C12-C14)amine .....	7 .....		PEA	

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Phosphoric acid .....	1	1	PAC	
Phosphorus .....	0	1	PPW	PPR/PPB
Phthalate based polyester polyol .....	0	1, 2	PBE	
Phthalic anhydride .....	11	.....	PAN	
alpha-Pinene .....	30	.....	PIO	PIN
beta-Pinene .....	30	.....	PIP	PIN
Pine oil .....	33	.....	PNL	OPI
Polyalkyl(C18-C22) acrylate in Xylene .....	14	1	PIX	
Polyalkylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	.....	.....	PGB	PAG
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	40	.....	PAG	
<i>Including:</i>				
<i>Diethylene glycol butyl ether</i>				
<i>Diethylene glycol ethyl ether</i>				
<i>Diethylene glycol n-hexyl ether</i>				
<i>Diethylene glycol methyl ether</i>				
<i>Diethylene glycol n-propyl ether</i>				
<i>Dipropylene glycol butyl ether</i>				
<i>Dipropylene glycol methyl ether</i>				
<i>Polyalkylene glycol butyl ether</i>				
<i>Polyethylene glycol monoalkyl ether</i>				
<i>Polypropylene glycol methyl ether</i>				
<i>Tetraethylene glycol methyl ether</i>				
<i>Triethylene glycol butyl ether</i>				
<i>Triethylene glycol ethyl ether</i>				
<i>Triethylene glycol methyl ether</i>				
<i>Tripropylene glycol methyl ether</i>				
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate .....	34	.....	PAF	
<i>Including:</i>				
<i>Diethylene glycol butyl ether acetate</i>				
<i>Diethylene glycol ethyl ether acetate</i>				
<i>Diethylene glycol methyl ether acetate</i>				
Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures .....	40	.....	PPX	
Polyalkylene oxide polyol .....	20	.....	PAO	
Polyalkyl methacrylate (C1-C20) .....	.....	.....		
Polyalkyl(C10-C20)methacrylate .....	14	1	PMT	
Polyalkyl(C10-C18)methacrylate/Ethylene propylene copolymer mixture .....	14	1	PEM	
Polyaluminum chloride solution .....	1	1		
Polybutadiene, hydroxyl terminated .....	20	.....		
Polybutene .....	30	.....	PLB	
Polybutenyl succinimide .....	10	.....	PBS	
Poly(2+)cyclic aromatics .....	32	.....	PCA	
Polydimethylsiloxane .....	34	.....		
Polyether (molecular weight 2000+) .....	41	.....	PYR	
Polyethylene glycol .....	40	.....		
Polyethylene glycol dimethyl ether .....	40	.....		
Polyethylene glycol monoalkyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether .....	.....	.....	PEE	PAG
Polyethylene polyamines .....	7	2	PEB	
Polyferric sulfate solution .....	34	.....	PSS	
Polyglycerine, Sodium salts solution (containing less than 3% Sodium hydroxide). .....	20	2	PGT	
Polyglycerol .....	20	.....		GCR
Polyisobutamine in aliphatic (C10-C14) solvent .....	7	.....	PIB	
Polyisobutetyl anhydride adduct .....	11	.....		
Poly(4+)isobutylene .....	30	.....		
Poly(methylene polyphenyl isocyanate) .....	12	.....	PPI	
Poly(methylsiloxyane) .....	34	.....		
Polyolefin (molecular weight 300+) .....	30	.....		
Polyolefin amide alkeneamine (C17+) .....	33	.....	POH	
Polyolefin amide alkeneamine (C28+) .....	33	.....	POD	
Polyolefin amide alkeneamine borate (C28-C250) .....	33	.....	PAB	
Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture .....	7	.....		
Polyolefin amide alkeneamine polyol .....	20	.....	PAP	
Poly(C17-)olefin amine .....	7	.....	POG	
Polyolefinamine (C28-C250) .....	33	.....	POM	
Polyolefinamine in alkyl(C2-C4)benzenes .....	32	.....	POF	
Polyolefin aminoester salt .....	34	.....	PAE	
Polyolefin anhydride .....	11	.....	PAR	
Polyolefin ester (C28-C250) .....	34	.....	POS	
Polyolefin phenolic amine (C28-C250) .....	7	.....	PPH	
Polyolefin phosphorosulfide, barium derivative (C28-C250) .....	34	.....	PPS	
Poly(20)oxyethylene sorbitan monooleate .....	34	.....	PSM	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Poly(5+)propylene .....	30 .....		PLQ	PLP
Polypropylene glycol .....	40 .....		PGC	
<i>Polypropylene glycol methyl ether, see Propylene glycol monoalkyl ether ..</i>	.....		PGM	PGE
Polysiloxane .....	34 .....			DMP
Poly(tetramethylene ether) glycols (mw 950-1050) ( <i>alpha</i> -hydro- <i>omega</i> -Hydroxytetradeca(oxytetramethylene)).	40 .....		HTO	
Polytetramethylene ether glycol .....	40 .....			
Potassium chloride solution .....	43 .....		PCS	(DRB)
Potassium formate solution .....	34 .....		PFR	
Potassium hydroxide solution ( <i>IMO cargo name</i> ), <i>see Caustic potash solution.</i>	5 .....	2		CPS
Potassium oleate .....	34 .....		POE	
Potassium salt of polyolefin acid .....	34 .....			
Potassium thiosulfate solution .....	43 .....		PTF	
Propane .....	31 .....	1	PRP	
Propanolamine .....	8 .....		PAX	MPA/PLA
Propionaldehyde .....	19 .....		PAD	
Propionic acid .....	4 .....		PNA	
Propionic anhydride .....	11 .....		PAH	
Propionitrile .....	37 .....		PCN	
<i>n</i> -Propoxypropanol, <i>see Propylene glycol monoalkyl ether ..</i>	.....		PXP	PGE
Propyl acetate .....	34 .....			IAC/PAT
Propyl alcohol .....	20 .....	2		IPA/PAL
Propylamine .....	7 .....			IPP/PRA
iso-Propylamine solution .....	7 .....			IPO/IPQ
Propylbenzene .....	32 .....	2	PBY	PBZ/CUM
n-Propyl chloride .....	36 .....		PRC	
iso-Propylcyclohexane .....	31 .....	1	IPX	
Propylene .....	30 .....		PPL	
Propylene-butylene copolymer .....	30 .....		PBP	
Propylene carbonate .....	34 .....			
Propylene dimer .....	30 .....		PDR	
Propylene glycol .....	20 .....	2	PPG	
<i>Propylene glycol n-butyl ether, see Propylene glycol monoalkyl ether ..</i>	.....		PGD	PGE
<i>Propylene glycol ethyl ether, see Propylene glycol monoalkyl ether ..</i>	.....		PGY	PGE
<i>Propylene glycol methyl ether, see Propylene glycol monoalkyl ether ..</i>	.....		PME	PGE
Propylene glycol methyl ether acetate .....	34 .....		PGN	
Propylene glycol monoalkyl ether .....	40 .....		PGE	
<i>Including:</i>				
<i>n</i> -Propoxypropanol .....				
<i>Propylene glycol n-butyl ether .....</i>				
<i>Propylene glycol ethyl ether .....</i>				
<i>Propylene glycol methyl ether .....</i>				
<i>Propylene glycol propyl ether .....</i>				
Propylene glycol phenyl ether .....	40 .....		PGP	
<i>Propylene glycol propyl ether, see Propylene glycol monoalkyl ether ..</i>	.....			PGE
Propylene oxide .....	16 .....	1	POX	
Propylene, Propane, MAPP gas mixture .....	30 .....	2	PPM	
Propylene tetramer .....	30 .....		PTT	
Propylene trimer .....	30 .....		PTR	
Propyl ether .....	41 .....			IPE/PRE
<i>Pseudocumene, see Trimethylbenzene .....</i>	.....			TME/TRE
Pyridine .....	9 .....		PRD	
<i>Pyridine bases, see Paraldehyde-Ammonia reaction product .....</i>	.....			PRB
Roehm monomer 6615 .....	14 .....	1	RMN	
Rosin oil .....	33 .....		ORN	
Rosin soap (disproportionated) solution .....	43 .....		RSP	
ROUNDUP (See also Glyphosate solution) .....	7 .....		RUP	
<i>Rum, see Alcoholic beverages .....</i>	.....			
SAP 7001 .....	0 .....	1	SON	
Sewage sludge .....	43 .....			
Silica slurry .....	43 .....			
Sludge, treated .....	43 .....			
Sodium acetate, Glycol, Water mixture (not containing Sodium hydroxide)	34 .....	2	SAO	SAP
Sodium acetate, Glycol, Water mixture (containing Sodium hydroxide)	5 .....		SAP	SAO
Sodium acetate solution .....	34 .....		SAN	AKP
Sodium alkyl sulfonate solution .....	43 .....		SSU	
Sodium alkyl (C14-C17) sulfonates 60-65% solution ( <i>IMO cargo name</i> ), <i>see Alkane (C14-C17) sulfonic acid, sodium salt solution.</i>	34 .....		AKA	
Sodium aluminate solution .....	5 .....		SAU	
Sodium aluminosilicate slurry .....	34 .....			
Sodium benzoate solution .....	34 .....		SBN	
Sodium borohydride, Sodium hydroxide solution .....	5 .....		SBX	SBH/SBI

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Sodium carbonate solutions .....	5 .....		SCE	
Sodium chlorate solution .....	0 .....	1, 2	SDD	SDC
Sodium cyanide solution .....	5 .....		SCS	SCN
Sodium dichromate solution .....	0 .....	1, 2	SDL	SCR
<i>Sodium dimethyl naphthalene sulfonate solution, see Dimethyl naphthalene sulfonic acid, sodium salt solution.</i>	.....			DNS
Sodium hydrogen sulfide, Sodium carbonate solution .....	0 .....	1, 2	SSS	
Sodium hydrogen sulfite solution .....	43 .....		SHX	
Sodium hydrosulfide solution .....	5 .....	2	SHR	
Sodium hydrosulfide, Ammonium sulfide solution .....	5 .....	2	SSA	
Sodium hydroxide solution ( <i>IMO cargo name</i> ), <i>see Caustic soda solution</i>	5 .....	2		CSS
Sodium hypochlorite solution .....	5 .....			SHP/SHQ/(SHC)
Sodium lignosulfonate solution, <i>see also Lignin liquor</i> .....	43 .....			
Sodium long chain alkyl salicylate (C13+) .....	34 .....		SLS	
Sodium 2-mercaptopbenzothiazol solution .....	5 .....		SMB	
<i>Sodium N-methyl dithio carbamate solution, see Metam sodium solution ...</i>	.....			MSS
<i>Sodium naphthalene sulfonate solution, see Naphthalene sulfonic acid, sodium salt solution.</i>	.....			NSA
<i>Sodium naphthenate solution, see Naphthenic acid, sodium salt solution ..</i>	.....			NTS
Sodium nitrite solution .....	5 .....		SNI	SNT
Sodium petroleum sulfonate .....	33 .....		SPS	
Sodium polyacrylate solution .....	43 .....	2		
<i>Sodium salt of Ferric hydroxyethylethylenediaminetriacetic acid solution, see Ferric hydroxyethylethylenediaminetriacetic acid, trisodium salt solution.</i>	.....		STA	FHX
Sodium silicate solution .....	43 .....	2	SSN	SSC
Sodium sulfide, Hydrosulfide solution .....	0 .....	1, 2		SSH/SSI/SSJ
Sodium sulfide solution .....	43 .....		SDR	
Sodium sulfite solution .....	43 .....		SUP	SUS
Sodium tartrates, Sodium succinates solution .....	43 .....		STM	
Sodium thiocyanate solution .....	0 .....	1, 2	STS	SCY
Sorbitol solutions .....	20 .....			SBT
Soyabean oil (epoxidized) .....	34 .....			OSC/EVO
<i>Stearic acid, see Fatty acids (saturated, C14+)</i> .....	.....		SRA	FAD
Stearlyl alcohol .....	20 .....			
Styrene .....	30 .....		STY	STX
Styrene monomer .....	30 .....		STY	STX
Sulfohydrocarbon (C3-C88) .....	33 .....		SFO	
Sulfohydrocarbon, long chain (C18+) alkylamine mixture .....	7 .....		SFX	
Sulfolane .....	39 .....		SFL	
Sulfonated polyacrylate solutions .....	43 .....	2		
Sulfur .....	0 .....	1		SXX
Sulfuric acid .....	2 .....	2	SFA	
Sulfuric acid, spent .....	2 .....			SAC
Sulfurized fat (C14-C20) .....	33 .....		SFT	
Sulfurized polyolefinamide alkene(C28-C250) amine .....	33 .....		SPO	
Tall oil .....	34 .....			OTL
Tall oil fatty acid ( <i>Resin acids less than 20%</i> ) .....	34 .....	2		TOF
Tall oil fatty acid, barium salt .....	0 .....	1, 2		TOB
Tall oil soap (disproportionated) solution .....	43 .....			TOS
Tallow .....	34 .....	2		TLO
Tallow fatty acid .....	34 .....	2		TFD
<i>Tallow fatty alcohol, see Alcohols (C13+)</i> .....	.....		TFA	ALY
Tallow nitrile .....	37 .....			TAN
<i>TAME, see tert-Amyl methyl ether</i> .....	.....			AYE
1,1,2,2-Tetrachloroethylene .....	36 .....		TEC	
<i>Tetrachloroethylene, see Perchloroethylene</i> .....	.....		TTE	PER
<i>Tetradecanol, see Alcohols (C13+)</i> .....	.....		TTN	ALY
<i>Tetradecene, see the olefins entries</i> .....	.....		TTD	
<i>Tetradecylbenzene, see Alkyl(C9+)benzenes</i> .....	32 .....		TDB	AKB
Tetraethylene glycol .....	40 .....		TTG	
<i>Tetraethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i>	.....			PAG
Tetraethylenepentamine .....	7 .....	2	TTP	
Tetrahydrofuran .....	41 .....		THF	
Tetrahydronaphthalene .....	32 .....		THN	
<i>1,2,3,5-Tetramethylbenzene, see Tetramethylbenzene</i> .....	.....		TTB	TTC
<i>Tetramethylbenzene</i> .....	32 .....		TTC	TTB
<i>Tetrapropylbenzene, see Alkyl(C9+)benzenes</i> .....	.....			AKB
<i>Tetrasodium salt of EDTA solution, see Ethylenediaminetetraacetic acid, tetrasodium salt solution.</i>	.....			EDS
Titanium dioxide slurry .....	43 .....		TDS	
Titanium tetrachloride .....	2 .....		TTT	

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Toluene .....	32		TOL	
Toluenediamine .....	9		TDA	
Toluene diisocyanate .....	12		TDI	
o-Toluidine .....	9		TLI	
<i>Triarylphosphate, see Trisopropylated phenyl phosphates</i> .....			TRA	TPL
Tributyl phosphate .....	34		TBP	
1,2,4-Trichlorobenzene .....	36		TCB	
1,1,1-Trichlorethane .....	36	2	TCE	
1,1,2-Trichlorethane .....	36		TCM	
Trichloroethylene .....	36	2	TCL	
1,2,3-Trichloropropane .....	36	2	TCN	
1,1,2-Trichloro-1,2,2-trifluoroethane .....	36		TF	
Tricresyl phosphate .....	34		TCO/TCP	
<i>Tridecane, see n-Alkanes (C10+)</i> .....			TRD	ALJ
Tridecanoic acid .....	34		TDO	
<i>Tridecanol, see Alcohols (C13+)</i> .....			TDN	ALY
<i>Tridecene, see Olefins (C13+)</i> .....			TDC	
Tridecyl acetate .....	34		TAE	
Tridecylbenzene, <i>see Alkyl(C9+)</i> benzenes .....	32	2	TRB	AKB
Triethanolamine .....	8	2	TEA	
Triethylamine .....	7		TEN	
Triethylbenzene .....	32	2	TEB	
Triethylene glycol .....	40		TEG	
<i>Triethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....				PAG
Triethylene glycol butyl ether mixture .....	40			
Triethylene glycol dibenzoate .....	34		TGB	
Triethylene glycol di-(2-ethylbutyrate) .....	34		TGD	
Triethylene glycol ether mixture .....	40			
<i>Triethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....			TGE	PAG
<i>Triethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....			TGY	PAG
Triethylenetetramine .....	7	2	TET	
Triethyl phosphate .....	34		TPS	
Triethyl phosphite .....	34	2	TPI	
Triisobutylene .....	30		TIB	
Triisooctyl trimellitate .....	34			
Triisopropanolamine .....	8		TIP	
<i>Triisopropanolamine salt of 2,4-Dichlorophenoxyacetic acid solution, see 2,4-Dichlorophenoxyacetic acid, Triisopropanolamine salt solution.</i> .....				DTI
Trisopropylated phenyl phosphates .....	34		TPL	
Trimethylacetic acid .....	4		TAA	
Trimethylamine solution .....	7		TMT	
Trimethylbenzene .....	32	2	TRE	TME/TMB/TMD
Trimethylhexamethylenediamine (2,2,4- and 2,4,4-) .....	7		THA	
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-) .....	12		THI	
<i>Trimethyl nonanol, see Dodecanol</i> .....				DDN
Trimethylol propane polyethoxylate .....	20		TPR	
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate .....	34		TMQ	
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate .....	34		TMP	
2,2,4-Trimethyl-3-pentanol-1-isobutyrate .....	34			
Trimethyl phosphite .....	34	2	TPP	
1,3,5-Trioxane .....	41	2	TRO	
Triphenylborane, Caustic soda solution .....	5		TPB	
<i>Tripropylene, see Propylene trimer</i> .....				PTR
Tripropylene glycol .....	40		TGC	
<i>Tripropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.</i> .....			TGM	PAG
Trisodium nitrilotriacetate .....	34			
Trisodium phosphate solution .....	5		TSP	
<i>Trisodium salt of N-(Hydroxyethyl)ethylenediaminetriacetic acid solution, see N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution.</i> .....				HET
Trixylol phosphate ( <i>IMO cargo name</i> ), <i>see Trixylol phosphate</i> .....	34			TRP
Trixylol phosphate .....	34		TRP	
Turpentine .....	30		TPT	
Ugarsol CR Solvent 302 SG .....	8		UCS	
Undecanoic acid .....	4		UDA	
<i>Undecanol, see Undecyl alcohol</i> .....				UND
Undecene .....	30		UDC	
Undecyl alcohol .....	20		UND	
<i>Undecylbenzene, see Alkyl(C9+)</i> benzenes .....			UDB	AKB

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Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Urea, Ammonium mono- and di-hydrogen phosphate, Potassium chloride solution.	0	1	UPX	
Urea, Ammonium nitrate solution (containing Ammonia) .....	6	.....	UAS	
Urea, Ammonium nitrate solution (not containing Ammonia) .....	43	.....	UAT	ANU
Urea, Ammonium phosphate solution .....	43	.....	UAP	
Urea solution .....	43	.....		URE
Valeraldehyde .....	19	.....	VAK	IVA/VAL
Vanillin black liquor .....	5	.....	VBL	
Vegetable oils, n.o.s. ....	34	.....	VEO	
<i>Including:</i>				
<i>Beechnut oil</i>				
<i>Castor oil</i>				
<i>Cocoa butter</i>				
<i>Coconut oil</i>				
<i>Corn oil</i>				
<i>Cottonseed oil</i>				
<i>Groundnut oil</i>				
<i>Hazelnut oil</i>				
<i>Linseed oil</i>				
<i>Nutmeg butter</i>				
<i>Oiticica oil</i>				
<i>Olive oil</i>				
<i>Palm kernel oil</i>				
<i>Palm oil</i>				
<i>Peel oil (oranges and lemons)</i>				
<i>Perilla oil</i>				
<i>Poppy oil</i>				
<i>Raisin seed oil</i>				
<i>Rapeseed oil</i>				
<i>Rice bran oil</i>				
<i>Safflower oil</i>				
<i>Salad oil</i>				
<i>Sesame oil</i>				
<i>Soya bean oil</i>				
<i>Sunflower seed oil</i>				
<i>Tucum oil</i>				
<i>Tung oil</i>				
<i>Walnut oil</i>				
Vegetable acid oils and distillates, n.o.s. ....	34	.....	VAO	
<i>Including:</i>				
<i>Corn acid oil</i>				
<i>Cottonseed acid oil</i>				
<i>Dark mixed acid oil</i>				
<i>Groundnut acid oil</i>				
<i>Mixed acid oil</i>				
<i>Mixed general acid oil</i>				
<i>Mixed hard acid oil</i>				
<i>Mixed soft acid oil</i>				
<i>Rapeseed acid oil</i>				
<i>Safflower acid oil</i>				
<i>Soya acid oil</i>				
<i>Sunflower seed acid oil</i>				
Vegetable protein solution .....	43	.....		
Vinyl acetate .....	13	1	VAM	
Vinyl chloride .....	35	.....	VCM	
Vinyl ethyl ether .....	13	1	VEE	
Vinylidene chloride .....	35	.....	VCI	
Vinyl neodecanate .....	13	1	VND	
Vinyltoluene .....	13	1	VNT	
Water .....	43	.....		
Waxes: .....				
<i>Candelilla</i>	34	.....	WAX	
<i>Carrauba</i>	34	.....	WDC	
<i>Paraffin</i>	31	1	WCA	
<i>Petroleum</i>	33	.....	WPF	
Wine, see Alcoholic beverages .....				
White spirit (low (15-20%) aromatic) .....	33	.....	WSL	WSP
Xylene .....	32	.....	XLX	XLM/XLO/XLP
Xylenes, Ethylbenzene mixture .....	32	.....	XEB	
Xylenols .....	21	.....	XYL	
Zinc alkaryl dithiophosphate (C7-C16) .....	34	.....	ZAD	
Zinc alkenyl carboxamide .....	10	.....	ZAA	
Zinc alkyl dithiophosphate (C3-C14) .....	34	.....	ZAP	

**Coast Guard, DHS**
**Pt. 150, Table II**

Chemical name	Group No.	Foot-note	CHRIS Code	Related CHRIS Codes
Zinc bromide, Calcium bromide solution, see Drilling brine (containing Zinc salts).	.....	.....		DZB

1. Because of very high reactivity or unusual conditions of carriage or potential compatibility problems, this commodity is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (G-MSO), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593-0001. Telephone (202) 372-1425.

2. See Appendix I—Exceptions to the Chart.

[USCG 2000-7079, 65 FR 67162, Nov. 8, 2000, as amended by USCG-2006-25697, 71 FR 55746, Sept. 25, 2006; USCG-2008-0906, 73 FR 56510, Sept. 29, 2008; USCG-2009-0702, 74 FR 49236, Sept. 25, 2009; USCG-2010-0759, 75 FR 60003, Sept. 29, 2010]

TABLE II TO PART 150—GROUPING OF CARGOES

0. UNASSIGNED CARGOES

Acetone cyanohydrin<sup>1,2</sup>  
Alkylbenzenesulfonic acid<sup>1,2</sup>  
Aluminium chloride, Hydrochloric acid solution<sup>1</sup>  
Ammonium hydrogen phosphate solution<sup>1</sup>  
Ammonium nitrate solution<sup>1</sup>  
Ammonium thiocyanate, Ammonium thiosulfate solution<sup>1</sup>  
Benzenesulfonyl chloride<sup>1,2</sup>  
gamma-Butyrolactone<sup>1,2</sup>  
Chlorine<sup>1</sup>  
Chlorosulfonic acid<sup>1</sup>  
Decyloxytetrahydro-thiophene dioxide<sup>2</sup>  
tert-Dodecanethiol<sup>2</sup>  
2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution<sup>1,2</sup>  
Dimethylamine salt of 2,4-Dichlorophenoxyacetic acid solution<sup>1,2</sup>  
Diphenylopropane-Epichlorohydrin resins<sup>1</sup>  
Dodecylbenzenesulfonic acid<sup>1,2</sup>  
Dodecyl hydroxypropyl sulfide<sup>2</sup>  
Ethylene oxide<sup>1</sup>  
Hydrogen peroxide solutions<sup>1</sup>  
Lactic acid<sup>2</sup>  
Long chain alkaryl sulfonic acid (C16-C60)<sup>2</sup>  
Magnesium chloride solution<sup>1,2</sup>  
Molasses residue<sup>1</sup>  
Motor fuel antiknock compounds containing Lead alkyls<sup>1</sup>  
Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution<sup>1</sup>  
NIAX POLYOL APP 240C<sup>1,2</sup>  
Nitrating acid<sup>1</sup>  
Nitric acid (greater than 70%)<sup>1</sup>  
o-Nitrophenol<sup>1,2</sup>  
Noxious Liquid Substance, n.o.s. (NLS's)<sup>1</sup>  
Oleum<sup>1,2</sup>  
Phosphorus<sup>1</sup>  
Phthalate based polyester polyol<sup>2</sup>  
SAP 7001<sup>1</sup>  
Sodium chlorate solution<sup>1,2</sup>  
Sodium dichromate solution<sup>1,2</sup>  
Sodium hydrogen sulfide, Sodium carbonate solution<sup>1,2</sup>  
Sodium sulfide, Hydrosulfide solution<sup>1,2</sup>  
Sodium thiocyanate solution<sup>1,2</sup>  
Sulfur<sup>1</sup>

Tall oil fatty acid, barium salt<sup>2</sup>  
Urea, Ammonium mono- and di-hydrogen phosphate, Potassium chloride solution  
1. NON-OXIDIZING MINERAL ACIDS  
Di-(2-ethylhexyl)phosphoric acid  
Ferric chloride solution  
Fluorosilicic acid  
Hydrochloric acid  
Phosphoric acid  
Polyaluminum chloride solution  
2. SULFURIC ACIDS  
Sulfuric acid<sup>2</sup>  
Sulfuric acid, spent  
Titanium tetrachloride  
3. NITRIC ACID  
Ferric nitrate, Nitric acid solution  
Nitric acid (70% or less)  
4. ORGANIC ACIDS  
Acetic acid<sup>2</sup>  
Acrylic acid<sup>2</sup>  
Butyric acid  
Casewhite nut shell oil (untreated)  
Citric acid  
Chloroacetic acid solution  
Chloropropionic acid  
Decanoic acid  
2,2-Dichloropropionic acid  
2,2-Dimethyloctanoic acid  
2-Ethylhexanoic acid  
Formic acid<sup>2</sup>  
Glycolic acid  
Glyoxylic acid  
n-Heptanoic acid  
Hexanoic acid  
2-Hydroxy-4-(methylthio)butanoic acid  
Methacrylic acid  
Naphthenic acid  
Neodecanoic acid  
Nonanoic acid  
Nonanoic, Tridecanoic acid mixture  
Octanoic acid  
n-Pentanoic acid, 2-Methyl butyric acid mixture  
Pentanoic acid  
Propionic acid  
Trimethylacetic acid  
Undecanoic acid

**Pt. 150, Table II**

<p><b>5. CAUSTICS</b></p> <p>Ammonium sulfide solution          Calcium hypochlorite solutions          Caustic potash solution<sup>2</sup>          Caustic soda solution<sup>2</sup>          Cresylate spent caustic          Cresylic acid, sodium salt solution          Kraft black liquor          Kraft pulping liquors          Mercaptobenzothiazol, sodium salt solution          Potassium hydroxide solution<sup>2</sup>          Sodium acetate, Glycol, Water mixture (containing Sodium hydroxide)          Sodium aluminate solution          Sodium borohydride, Sodium hydroxide solution          Sodium carbonate solutions          Sodium cyanide solution          Sodium hydrosulfide solution<sup>2</sup>          Sodium hydrosulfide, Ammonium sulfide solution<sup>2</sup>          Sodium hydroxide solution<sup>2</sup>          Sodium hypochlorite solution          Sodium 2-mercaptobenzothiazol solution          Sodium naphthenate solution          Sodium nitrite solution          Triphenylborane, Caustic soda solution          Trisodium phosphate solution          Vanillin black liquor</p> <p><b>6. AMMONIA</b></p> <p>Ammonia, anhydrous          Ammonia, aqueous          Ammonium hydroxide (28% or less Ammonia)          Ammonium nitrate, Urea solution (containing Ammonia)          Urea, Ammonium nitrate solution (containing Ammonia)</p> <p><b>7. ALIPHATIC AMINES</b></p> <p>N-Aminoethylpiperazine          Butylamine          Cyclohexylamine          Dibutylamine          Diethylamine<sup>2</sup>          Diethylenetriamine<sup>2</sup>          Diisobutylamine          Diisopropylamine          Dimethylamine          Dimethylamine solution          N,N-Dimethylcyclohexylamine          N,N-Dimethyldecylamine          Di-n-propylamine          Diphenylamine, reaction product with 2,2,4-Trimethylpentene          Diphenylamines, alkylated          Dodecylamine, Tetradecylamine mixture<sup>2</sup>          Dodecyldimethylamine,              Tetradecyldimethylamine mixture          Ethylamine<sup>2</sup>          Ethylamine solution          Ethyleneamine EA 1302<sup>2</sup>          N-Ethyl-n-butylamine          N-Ethyl cyclohexylamine</p>	<p>Ethylenediamine<sup>2</sup>          2-Ethyl hexylamine          N-Ethylmethylallylamine          Glyphosate solution (not containing surfactant)          Hexamethylenediamine          Hexamethylenediamine solution          Hexamethylenetetramine          Hexamethylenetetramine solutions          Hexamethylenimine          HiTec 321          bis-(Hydrogenated tallow alkyl)methyl amines          Isophorone diamine          Long chain polyetheramine in alkyl(C<sub>2</sub>-C<sub>4</sub>)benzenes          Metam sodium solution          Methylamine solutions          Morpholine<sup>2</sup>          Oleylamine          Pentaethylenehexamine          Pentaethylenehexamine,              Tetraethylenepentamine mixture          Phosphate esters, alkyl (C<sub>12</sub>-C<sub>14</sub>) amine          Polyethylene polyamines<sup>2</sup>          Polyolefin amide alkeneamine (C<sub>28</sub>+)          Polyisobuteneamine in aliphatic (C<sub>10</sub>-C<sub>14</sub>) solvent          Poly (C<sub>17</sub>+ ) olefin amine          Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture          Propanil, Mesityl oxide, Isophorone mixture          Propylamine          iso-Propylamine solution          Roundup          Sulfohydrocarbon, long chain (C<sub>18</sub>+ ) alkylamine mixture          Tetraethylenepentamine<sup>2</sup>          Triethylamine          Triethylenetetramine<sup>2</sup>          Trimethylamine solution          Trimethylhexamethylene diamine (2,2,4- and 2,4,4-)</p> <p><b>8. ALKANOLAMINES</b></p> <p>2-(2-Aminoethoxy)ethanol          Aminoethyl diethanolamine,              Aminoethyl ethanolamine solution          Aminoethyl ethanolamine          2-Amino-2-methyl-1-propanol          Diethanolamine          Diethylaminoethanol          Diethylethanolamine          Diisopropanolamine          Dimethyllethanolamine          Ethanolamine          Ethoxylated long chain (C<sub>16</sub>+ ) alkyloxyalkanamine          Methyl diethanolamine          Propanolamine          Triethanolamine<sup>2</sup>          Triisopropanolamine          Ucarsol CR Solvent 302 SG</p>
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**Coast Guard, DHS**

9. AROMATIC AMINES	
Alkyl (C8-C9) phenylamine in aromatic solvents	Butyl methacrylate
Aniline	Butyl methacrylate, Decyl methacrylate, Cetyl-Eicosyl methacrylate mixture
Calcium long chain alkyl phenolic amine (C8-C40)	Cetyl-Eicosyl methacrylate mixture
4-Chloro-2-methylphenoxyacetic acid, Dimethylamine salt solution	Decyl acrylate
Dialkyl (C8-C9) diphenylamines	Dodecyl methacrylate
2,6-Diethylaniline	Dodecyl-Octadecyl methacrylate mixture
Dimethylamine salt of 4-Chloro-2-methylphenoxyacetic acid solution	Dodecyl-Pentadecyl methacrylate mixture
2,6-Dimethylaniline	Ethyl acrylate
Diphenylamine	2-Ethylhexyl acrylate
2-Ethyl-6-methyl-N-(1'-methyl-2-methoxyethyl)aniline	Ethyl methacrylate
2-Methyl-6-ethyl aniline	2-Hydroxyethyl acrylate <sup>2</sup>
2-Methyl-5-ethyl pyridine	Methacrylic resin in Ethylene dichloride
Methyl pyridine	Methyl acrylate
3-Methylpyridine	Methyl methacrylate
N-Methyl-2-pyrrolidone <sup>2</sup>	Nonyl methacrylate
Paraldehyde-Ammonia reaction product	Polyalkyl(C18 - C22) acrylate in Xylene
Pyridine	Polyalkyl (C10-C18) methacrylate/Ethylene
Pyridine bases	Polyalkyl (C10-C20) methacrylate
Toluenediamine	Propylene copolymer mixture
p-Toluidine	Roehm monomer 6615
10. AMIDES	
Acetochlor	15. SUBSTITUTED ALLYLS
Acrylamide solution	Acrylonitrile <sup>2</sup>
Alkenyl(C11+)amide	Allyl alcohol <sup>2</sup>
N,N-Dimethylacetamide	Allyl chloride
N,N-Dimethylacetamide solution	1,3-Dichloropropene
Dimethylformamide	Dichloropropene, Dichloropropane mixtures
Formamide	Methacrylonitrile
N,N-bis(2-Hydroxyethyl) oleamide	16. ALKYLENE OXIDES
Octadecenoamide	Butylene oxide
Zinc alkenyl carboxamide	Ethylene oxide, Propylene oxide mixtures
11. ORGANIC ANHYDRIDES	
Acetic anhydride	Propylene oxide
Alkenylsuccinic anhydride	17. EPICHLOROHYDRIN
Maleic anhydride	Chlorohydrins
Phthalic anhydride	Epichlorohydrin
Polyisobut enyl anhydride adduct	18. KETONES
Polyolefin anhydride	Acetone <sup>2</sup>
Propionic anhydride	Acetophenone
12. ISOCYANATES	
Diphenylmethane diisocyanate	Amyl methyl ketone
Hexamethylene diisocyanate	Butyl heptyl ketone
Isophorone diisocyanate	Camphor oil
Poly(methylene polyphenyl isocyanate	1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one <sup>2</sup>
Toluene diisocyanate	Cyclohexanone
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-)	Cyclohexanone, Cyclohexanol mixtures <sup>2</sup>
13. VINYL ACETATE	
Vinyl acetate	Diisobutyl ketone
Vinyl ethyl ether	Ethyl amyl ketone
Vinyl neodecanate	Epoxy resin
Vinyl toluene	Ketone residue
14. ACRYLATES	
Butyl acrylate	Isophorone <sup>2</sup>
	Mesityl oxide <sup>2</sup>
	Methyl amyl ketone
	Methyl butyl ketone
	Methyl butyl ketone
	Methyl ethyl ketone <sup>2</sup>
	Methyl heptyl ketone
	Methyl isoamyl ketone
	Methyl isobutyl ketone <sup>2</sup>
	Methyl propyl ketone
	Trifluralin in Xylene

**Pt. 150, Table II**

Butyl methacrylate
Butyl methacrylate, Decyl methacrylate, Cetyl-Eicosyl methacrylate mixture
Cetyl-Eicosyl methacrylate mixture
Decyl acrylate
Dodecyl methacrylate
Dodecyl-Octadecyl methacrylate mixture
Dodecyl-Pentadecyl methacrylate mixture
Ethyl acrylate
2-Ethylhexyl acrylate
Ethyl methacrylate
2-Hydroxyethyl acrylate <sup>2</sup>
Methacrylic resin in Ethylene dichloride
Methyl acrylate
Methyl methacrylate
Nonyl methacrylate
Polyalkyl(C18 - C22) acrylate in Xylene
Polyalkyl (C10-C18) methacrylate/Ethylene
Polyalkyl (C10-C20) methacrylate
Propylene copolymer mixture
Roehm monomer 6615
15. SUBSTITUTED ALLYLS
Acrylonitrile <sup>2</sup>
Allyl alcohol <sup>2</sup>
Allyl chloride
1,3-Dichloropropene
Dichloropropene, Dichloropropane mixtures
Methacrylonitrile
16. ALKYLENE OXIDES
Butylene oxide
Ethylene oxide, Propylene oxide mixtures
Propylene oxide
17. EPICHLOROHYDRIN
Chlorohydrins
Epichlorohydrin
18. KETONES
Acetone <sup>2</sup>
Acetophenone
Amyl methyl ketone
Butyl heptyl ketone
Camphor oil
1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one <sup>2</sup>
Cyclohexanone
Cyclohexanone, Cyclohexanol mixtures <sup>2</sup>
Diisobutyl ketone
Ethyl amyl ketone
Epoxy resin
Ketone residue
Isophorone <sup>2</sup>
Mesityl oxide <sup>2</sup>
Methyl amyl ketone
Methyl butyl ketone
Methyl butyl ketone
Methyl ethyl ketone <sup>2</sup>
Methyl heptyl ketone
Methyl isoamyl ketone
Methyl isobutyl ketone <sup>2</sup>
Methyl propyl ketone
Trifluralin in Xylene

**Pt. 150, Table II****46 CFR Ch. I (10-1-11 Edition)****19. ALDEHYDES**

Acetaldehyde	Methyl amyl alcohol
Acrolein <sup>2</sup>	Methyl butenol
Butyraldehyde	Methylbutynol
Crotonaldehyde <sup>2</sup>	2-Methyl-2-hydroxy-3-butyne
Decaldehyde	Methyl isobutyl carbinol
Ethylhexaldehyde	3-Methyl-3-methoxybutanol
2-Ethyl-3-propylacrolein <sup>2</sup>	2-Methyl-1,3-propanediol
Formaldehyde, Methanol mixtures <sup>2</sup>	Molasses
Formaldehyde solution <sup>2</sup>	Nonyl alcohol <sup>2</sup>
Furfural	Octanol <sup>2</sup>
Glutaraldehyde solution	Octyl alcohol <sup>2</sup>
Glyoxal solutions	Penacosa(oxypropane-2,3-diy)s
3-Methyl butyraldehyde	Pentadecanol
Methylolureas	Polyalkylene oxide polyol
3-(Methylthio)propionaldehyde	Polybutadiene, hydroxy terminated
Octyl aldehyde	Polyglycerol
Paraldehyde	Polyglycerine, Sodium salts solution (containing less than 3% Sodium hydroxide) <sup>2</sup>
Pentyl aldehyde	Polyolefin amide alkeneamine polyol
Propionaldehyde	Propyl alcohol <sup>2</sup>
Valeraldehyde	Propylene glycol <sup>2</sup>

**20. ALCOHOLS, GLYCOLS**

Acrylonitrile-Styrene copolymer dispersion in Polyether polyol	Rum
Alcoholic beverages	Sorbitol solutions
Alcohol polyethoxylates	Stearyl alcohol
Alcohol polyethoxylates, secondary	Tallow fatty alcohol
Alcohols (C13+)	Tetradecanol
Amyl alcohol	Tridecanol
Behenyl alcohol	Trimethyl nonanol
Brake fluid base mixtures	Trimethylol propane polyethoxylate
1,4-Butanediol	Undecanol
Butyl alcohol <sup>2</sup>	Undecyl alcohol
Butylene glycol <sup>2</sup>	
Cetyl-Stearyl alcohol	
Choline chloride solutions	
Cyclohexanol	
Decyl alcohol <sup>2</sup>	
Diacetone alcohol <sup>2</sup>	
Diethyl hexanol	
Diisobutyl carbinol	
2,2-Dimethylpropane-1,3-diol	
Dodecanol	
Dodecyl alcohol	
Ethoxylated alcohols, C11-C15	
2-Ethoxyethanol	
Ethyl alcohol <sup>2</sup>	
Ethyl butanol	
Ethylene chlorohydrin	
Ethylene cyanohydrin	
Ethylene glycol <sup>2</sup>	
2-Ethylhexanol	
Furfuryl alcohol <sup>2</sup>	
Glycerine <sup>2</sup>	
Glycerine, Dioxanedimethanol mixture	
Glycerol monooleate	
Heptanol	
Hexamethylene glycol	
Hexanol	
Hexylene glycol	
Hydroxy terminated polybutadiene	
Icosa(oxypropane-2,3-diy)s	
Lauryl polyglucose (50% or less)	
3-Methoxy-1-butanol	
Methyl alcohol <sup>2</sup>	

**21. PHENOLS, CRESOLS**

Benzyl alcohol	
Carbolic oil	
Creosote <sup>2</sup>	
Cresols	
Cresylic acid	
Cresylic acid diphenoxydized	
Cresylic acid, tar	
Dibutylphenols	
2,4-Dichlorophenol	
Dodecyl phenol	
o-Ethylphenol	
Long chain alkylphenate/phenol sulfide mixture	
Nonyl phenol	
Octyl phenol	
Phenol	
Xylenols	

**22. CAPROLACTAM SOLUTIONS**

Caprolactam solution

**23-29. UNASSIGNED****30. OLEFINS**

Amylene	
Aryl polyolefin (C11-C50)	
Butadiene	
Butadiene, Butylene mixtures (cont. Acetylenes)	
Butene	
Butene oligomer	
Butylene	
1,5,9-Cyclododecatriene	

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1,3-Cyclopentadiene dimer  
 Cyclopentadiene, Styrene, Benzene mixture  
 Cyclopentene  
 Decene  
 Dicyclopentadiene  
 Diisobutylene  
 Dipentene  
 Dodecene  
 Ethylene  
 Ethylene-Propylene copolymer  
 Ethylidene norbornene<sup>2</sup>  
 1-Heptene  
 Hexene  
 Isoprene  
 Isoprene concentrate (Shell)  
 Latex (ammonia (1% or less) inhibited)  
 Methyl acetylene, Propadiene mixture  
 Methyl butene  
 Methylcyclopentadiene dimer  
 2-Methyl-1-pentene  
 4-Methyl-1-pentene  
 alpha-Methyl styrene  
 Myrcene  
 Nonene  
 1-Octadecene  
 Octene  
 Olefin mixtures  
 alpha-Olefins (C6 - C18) mixtures  
 alpha-Olefins (C13+)  
 1,3-Pentadiene  
 Pentene  
 alpha-Pinene  
 beta-Pinene  
 Polybutene  
 Poly(4+isobutylene  
 Polyolefin (molecular weight 300+)  
 Polypropylene  
 Poly(5+)propylene  
 Propylene  
 Propylene-butylene copolymer  
 Propylene dimer  
 Propylene, Propane, MAPP gas mixture  
 Propylene tetramer  
 Propylene trimer  
 Styrene monomer  
 Tetradecene  
 Tridecene  
 Triisobutylene  
 Tripropylene  
 Turpentine  
 Undecene

31. PARAFFINS

Alkanes (C6-C9)  
 n-Alkanes (C10+)  
 iso- & cyclo-Alkanes (C10-C11)  
 iso- & cyclo-Alkanes (C12+)  
 Butane  
 Cycloheptane  
 Cyclohexane  
 Cyclopentane  
 Decane  
 Dodecane  
 Ethane  
 Ethyl cyclohexane  
 Heptane

**Pt. 150, Table II**

Hexane<sup>2</sup>  
 Methane  
 Methylcyclohexane  
 2-Methyl pentane  
 Nonane  
 Octane  
 Pentane  
 Propane  
 iso-Propylcyclohexane  
 Tridecane  
 Waxes:  
 Paraffin

32. AROMATIC HYDROCARBONS

Alkyl(C3-C4)benzenes  
 Alkyl(C5-C8)benzenes  
 Alkyl(C9+)benzenes  
 Alkyl acrylate-Vinyl pyridine copolymer in Toluene  
 Alkylbenzene, Alkyllindane, Alkyllindene mixture (each C12-C17)  
 Benzene  
 Benzene hydrocarbon mixtures (having 10% Benzene or more)  
 Benzene, Toluene, Xylene mixtures  
 Butylbenzene  
 Butyl phenol, Formaldehyde resin in Xylene  
 Butyl toluene  
 Cumene  
 Cymene  
 Decylbenzene  
 Dialkyl(C10 - C14) benzenes  
 Diethylbenzene  
 Diisopropylbenzene  
 Diisopropyl naphthalene  
 Diphenyl  
 Dodecylbenzene  
 Dodecyl xylene  
 Ethylbenzene  
 Ethyl toluene  
 1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)  
 Isopropylbenzene  
 Methyl naphthalene  
 Naphthalene  
 Naphthalene mixture  
 Naphthalene still residue  
 1-Phenyl-1-xylyl ethane  
 Poly(2+)cyclic aromatics  
 Polyolefin amine in alkylbenzenes (C2-C4)  
 Propylbenzene  
 Pseudocumene  
 C9 Resinfeed (DSM)<sup>2</sup>  
 Tetradecylbenzene  
 Tetrahydronaphthalene  
 1,2,3,5-Tetramethylbenzene  
 Toluene  
 Tridecylbenzene  
 Triethylbenzene  
 Trimethylbenzene  
 Undecylbenzene  
 Xylene  
 Xylenes, Ethylbenzene mixture

33. MISCELLANEOUS HYDROCARBON MIXTURES

Alachlor

**Pt. 150, Table II**

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Alkylbenzenesulfonic acid, sodium salt solutions	Pine
Alkyl dithiothiadiazole (C6-C24)	Rosin
Asphalt blending stocks, roofers flux	Sperm
Asphalt blending stocks, straight run residue	Spindle
Asphalt emulsion	Turbine
Aviation alkylates	Residual
Calcium sulfonate, Calcium carbonate, Hydrocarbon solvent mixture	Road
Coal tar	Transformer
Coal tar distillate	Oxyalkylated alkyl phenol formaldehyde
Coal tar, high temperature	Petrolatum
Coal tar pitch	Pine oil
Decahydronaphthalene	Polyolefin amine (C28-C250)
Degummed C9 (DOW)	Polyolefin amide alkeneamine (C17+)
Diphenyl, Diphenyl ether	Polyolefin amide alkeneamine borate (C28-C250)
Distillates, flashed feed stocks	Sodium petroleum sulfonate
Distillates, straight run	Sulfohydrocarbon (C3-C88)
Drilling mud (low toxicity) ( <i>if flammable or combustible</i> )	Waxes:
Gas oil, cracked	Petroleum
Gasoline blending stock, alkylates	Sulfurized fat (C14-C20)
Gasoline blending stock, reformates	Sulfurized polyolefinamide alkeneamines (C28-C250)
Gasolines:	White spirit (low (15-20%) aromatic)
Automotive ( <i>not over 4.23 grams lead per gal.</i> )	34. ESTERS
Aviation ( <i>not over 4.86 grams lead per gal.</i> )	Alkane (C14-C17) sulfonic acid, sodium salt solution
Casinghead ( <i>natural</i> )	Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture
Polymer	Alkyl ester copolymer (C6-C18)
Straight run	Alkyl(C7-C9) nitrates <sup>2</sup>
Jet Fuels:	Alkyl (C8-C40) phenol sulfide
JP-4	Alkyl (C10-C20, saturated and unsaturated) phosphite
JP-5	Alkyl sulfonic acid ester of phenol
JP-8	Alkyldaryl phosphate mixtures (more than 40%)
Kerosene	Amyl acetate
Mineral spirits	Animal and Fish oils, n.o.s.
Naphtha:	Animal and Fish acid oils and distillates, n.o.s.
Coal tar solvent	Barium long chain alkaryl (C11-C50) sulfonate
Petroleum	Barium long chain alkyl(C8-C14)phenate sulfide
Solvent	Benzene tricarboxylic acid trioctyl ester
Stoddard solvent	Benzyl acetate
Varnish Makers' and Painters'	Butyl acetate
Oil, fuel:	Butyl benzyl phthalate
No. 1	n-Butyl butyrate
No. 1-D	Butyl formate
No. 2	iso-Butyl isobutyrate
No. 2-D	n-Butyl propionate
No. 4	Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture
No. 5	Calcium long chain alkaryl sulfonate (C11-C50)
No. 6	Calcium long chain alkyl phenate sulfide (C8-C40)
Oil, misc:	Calcium long chain alkyl phenates
Aliphatic	Calcium long chain alkyl salicylate (C13+)
Aromatic	Calcium nitrate, Magnesium nitrate, Potassium chloride solution
Clarified	Calcium nitrate solution
Coal	Cobalt naphthenate in solvent naphtha
Crude	Coconut oil, fatty acid
Diesel	Copper salt of long chain alkanoic acids
Gas, high pour	
Heartcut distillate	
Linseed	
Lubricating	
Mineral	
Mineral seal	
Motor	
Neatsfoot	
Penetrating	

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Cottonseed oil, fatty acid	Magnesium long chain alkyl phenate sulfide (C8-C20)
Cyclohexyl acetate	Magnesium long chain alkyl salicylate (C11+)
Decyl acetate	3-Methoxybutyl acetate
Dialkyl(C7 - C13) phthalates	1-Methoxy-2-propyl acetate
Dibutyl hydrogen phosphonate	Methyl acetate
Dibutyl phthalate	Methyl acetoacetate
Diethylene glycol butyl ether acetate	Methyl amyl acetate
Diethylene glycol dibenzoate	Methyl butyrate
Diethylene glycol ethyl ether acetate	Methyl formate
Diethylene glycol methyl ether acetate	3-Methyl-3-methoxybutyl acetate
Diethylene glycol phthalate	Methyl salicylate
Di-(2-ethylhexyl)adipate	Metolachlor
Di-(2-ethylhexyl)phthalate	Naphthalene sulfonic acid, sodium salt solution (40% or less)
Diethyl phthalate	Nonyl acetate
Diethyl sulfate	n-Octyl acetate
Dihexyl phthalate	Octyl decyl adipate
Di-n-hexyl adipate	Oil, edible:
Diisobutyl phthalate	Beechnut
Diisodecyl phthalate	Castor
Diisonyl adipate	Cocoa butter
Diisonyl phthalate	Coconut <sup>2</sup>
Diisooctyl phthalate	Cod liver
Dimethyl adipate	Corn
Dimethylcyclicsiloxane hydrolyzate	Cotton seed
Dimethyl glutarate	Fish <sup>2</sup>
Dimethyl hydrogen phosphite <sup>2</sup>	Groundnut
Dimethyl naphthalene sulfonic acid, sodium salt solution <sup>2</sup>	Hazelnut
Dimethyl phthalate	Lard
Dimethyl polysiloxane	Lanolin
Dimethyl succinate	Nutmeg butter
Dinonyl phthalate	Olive
Diocyl phthalate	Palm <sup>2</sup>
Diphenyl tolyl phosphate, less than 0.02% ortho-isomer)	Palm kernel
Dipropylene glycol dibenzoate	Peanut
Dithiocarbamate ester (C7-C35)	Poppy
Ditridecyl adipate	Poppy seed
Ditridecyl phthalate	Raisin seed
2-Dodecenylsuccinic acid, dipotassium salt solution	Rapeseed
Diundecyl phthalate	Rice bran
2-Ethoxyethyl acetate	Safflower
Ethyl acetate	Salad
Ethyl acetoacetate	Sesame
Ethyl butyrate	Soya bean
Ethylene carbonate	Sunflower
Ethylene glycol acetate	Sunflower seed
Ethylene glycol butyl ether acetate	Tucum
Ethylene glycol diacetate	Vegetable
Ethylene glycol ethyl ether acetate	Walnut
Ethylene glycol methyl ether acetate	Oil, misc:
Ethyl-3-ethoxypropionate	Animal
Ethyl hexyl phthalate	Coconut oil, fatty acidid methyl ester
Ethyl propionate	Cotton seed oil, fatty acid
Ethyl propionate	Lanolin
Fatty acids (saturated, C14+)	Palm kernel oil, fatty acid methyl ester
Glycerol polyalkoxylate	Palm oil, methyl ester
Glyceryl triacetate	Pilchard
Glycidyl ester of C10 trialkyl acetic acid	Perilla
Glycidyl ester of tridecylacetic acid	Soapstock
Heptyl acetate	Soyabean (epoxidized)
Hexyl acetate	Tall
Lauric acid	Tall, fatty acid <sup>2</sup>
Lecithin	Tung
Magnesium long chain alkaryl sulfonate (C11-C50)	Olefin/Alkyl ester copolymer (molecular weight 2000+)

**Pt. 150, Table II**

Oleic acid  
 Palm kernel acid oil  
 Palm kernel acid oil, methyl ester  
 Palm stearin  
 n-Pentyl propionate  
 Poly(2-8)alkylene glycol monoalkyl(C1-C6)  
 ether acetate  
 Polydimethylsiloxane  
 Polyferric sulfate solution  
 Polymethylsiloxane  
 Poly(20)oxyethylene sorbitan monooleate  
 Polysiloxane  
 Polyolefin aminoester salt  
 Polyolefin ester (C28-C250)  
 Polyolefin phosphorusulfide, barium derivative (C28-C250)  
 Potassium formate solution  
 Potassium oleate  
 Potassium salt of polyolefin acid  
 Propyl acetate  
 Propylene carbonate  
 Propylene glycol methyl ether acetate  
 Sodium acetate, Glycol, Water mixture  
 (not containing Sodium hydroxide)<sup>2</sup>  
 Sodium acetate solution  
 Sodium benzoate solution  
 Sodium dimethyl naphthalene sulfonate  
 solution<sup>2</sup>  
 Sodium long chain alkyl salicylate (C13+)  
 Sodium naphthalene sulfonate solution  
 Soyabean oil (epoxidized)  
 Stearic acid  
 Tall oil  
 Tall oil fatty acid (*Resin acids less than 20%*)<sup>2</sup>  
 Tallow<sup>2</sup>  
 Tallow fatty acid<sup>2</sup>  
 Tributyl phosphate  
 Tricresyl phosphate  
 Tridecanoic acid  
 Tridecyl acetate  
 Triethylene glycol dibenzoate  
 Triethylene glycol di-(2-ethylbutyrate)  
 Triethyl phosphate  
 Triethyl phosphite<sup>2</sup>  
 Triisooctyl trimellitate<sup>2</sup>  
 Triisopropylated phenyl phosphates  
 2,2,4-Trimethyl-1,3-pentanediol  
 diisobutyrate  
 2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate  
 2,2,4-Trimethyl-3-pentanol-1-isobutyrate  
 Trimethyl phosphite<sup>2</sup>  
 Trisodium nitrilotriacetate  
 Trixylyl phosphate  
 Trixylenyl phosphate  
 Vegetable acid oils and distillates, n.o.s.  
 Vegetable oils, n.o.s.  
 Waxes:  
     Carnauba  
 Zinc alkaryl dithiophosphate (C7-C16)  
 Zinc alkyl dithiophosphate (C3-C14)

**35. VINYL HALIDES**

Vinyl chloride  
 Vinylidene chloride

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**36. HALOGENATED HYDROCARBONS**

Benzyl chloride  
 Bromochloromethane  
 Carbon tetrachloride<sup>2</sup>  
 Catoxid feedstock<sup>2</sup>  
 Chlorinated paraffins (C10 - C13)  
 Chlorinated paraffins (C14 - C17)  
 Chlorobenzene  
 Chlorodifluoromethane  
 Chloroform  
 Chlorotoluene  
 Dibromomethane  
 Dibutylphenols  
 3,4-Dichloro-1-butene  
 Dichlorobenzene  
 Dichlorodifluoromethane  
 1,1-Dichloroethane  
 1,6-Dichlorohexane  
 2,2'-Dichloroisopropyl ether  
 Dichlormethane  
 Dichloropropane  
 Ethyl chloride  
 Ethylene dibromide  
 Ethylene dichloride<sup>2</sup>  
 Methyl bromide  
 Methyl chloride  
 Monochlorodifluoromethane  
 n-Propyl chloride  
 Pentachloroethane  
 Perchloroethylene  
 1,1,2,2-Tetrachloroethane  
 1,2,3-Trichlorobenzene  
 1,2,4-Trichlorobenzene  
 1,1,1-Trichloroethane<sup>2</sup>  
 1,1,2-Trichloroethane  
 Trichloroethylene<sup>2</sup>  
 1,2,3-Trichloroproppane  
 1,1,2-Trichloro-1,2,2-trifluoroethane

**37. NITRILES**

Acetonitrile  
 Adiponitrile  
 Lactonitrile solution  
 Propionitrile  
 Tallow nitrile

**38. CARBON DISULFIDE**

Carbon disulfide

**39. SULFOLANE**

Sulfolane

**40. GLYCOL ETHERS**

Alkyl (C7-C11) phenol poly(4-12)ethoxylate  
 Alkyl (C9-C15) phenyl propoxylate  
 Diethylene glycol<sup>2</sup>  
 Diethylene glycol butyl ether  
 Diethylene glycol dibutyl ether  
 Diethylene glycol diethyl ether  
 Diethylene glycol ethyl ether  
 Diethylene glycol methyl ether  
 Diethylene glycol n-hexyl ether  
 Diethylene glycol phenyl ether  
 Diethylene glycol propyl ether  
 Dipropylene glycol

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Dipropylene glycol butyl ether  
 Dipropylene glycol methyl ether  
 Ethoxy triglycol  
 Ethylene glycol hexyl ether  
 Ethylene glycol methyl butyl ether  
 Ethylene glycol monoalkyl ethers  
 Ethylene glycol tert-butyl ether  
 Ethylene glycol butyl ether  
 Ethylene glycol dibutyl ether  
 Ethylene glycol ethyl ether  
 Ethylene glycol isopropyl ether  
 Ethylene glycol methyl ether  
 Ethylene glycol phenyl ether  
 Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture  
 Ethylene glycol propyl ether  
 Hexaethylene glycol  
 Methoxy triglycol  
 Nonyl phenol poly(4+)ethoxylates  
 Pentaethylene glycol methyl ether  
 Polyalkylene glycol butyl ether  
 Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures  
 Polyethylene glycols  
 Polyethylene glycol dimethyl ether  
 Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether  
 Polyethylene glycol monoalkyl ether  
 Polypropylene glycol methyl ether  
 Polypropylene glycols  
 Poly(tetramethylene ether) glycols (mw 950-1050)  
 Polytetramethylene ether glycol  
 n-Propoxypropanol  
 Propylene glycol monoalkyl ether  
 Propylene glycol ethyl ether  
 Propylene glycol methyl ether  
 Propylene glycol n-butyl ether  
 Propylene glycol phenyl ether  
 Propylene glycol propyl ether  
 Tetraethylene glycol  
 Tetraethylene glycol methyl ether  
 Triethylene glycol  
 Triethylene glycol butyl ether  
 Triethylene glycol butyl ether mixture  
 Triethylene glycol ether mixture  
 Triethylene glycol ethyl ether  
 Triethylene glycol methyl ether  
 Tripolyethylene glycol  
 Tripolyethylene glycol methyl ether

**41. ETHERS**

Alkaryl polyether (C9-C20)  
 tert-Amyl methyl ether  
 Butyl ether  
 2,2'-Dichloroethyl ether  
 Diethyl ether  
 Diglycidyl ether of Bisphenol A  
 Diglycidyl ether of Bisphenol F  
 Dimethyl furan  
 1,4-Dioxane  
 Diphenyl ether  
 Diphenyl ether, Diphenyl phenyl ether mixture  
 Ethyl tert-butyl ether<sup>2</sup>  
 Ethyl ether  
 Long chain alkaryl polyether (C11-C20)

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Methyl-tert-butyl ether<sup>2</sup>  
 Methyl tert-pentyl ether  
 Propyl ether  
 Tetrahydrofuran  
 1,3, 5-Trioxane  
 Polyether (molecular weight 2000+)

**42. NITROCOMPOUNDS**

o-Chloronitrobenzene  
 Dinitrotoluene  
 Nitrobenzene  
 Nitroethane  
 Nitroethane, 1-Nitropropane mixture  
 Nitropropane  
 Nitropropane, Nitroethane mixtures  
 Nitrotoluene

**43. MISCELLANEOUS WATER SOLUTIONS**

Alkyl polyglucoside solutions  
 Aluminum sulfate solution<sup>2</sup>  
 2-Amino-2-hydroxymethyl-1,3-propanediol solution  
 Ammonium bisulfite solution<sup>2</sup>  
 Ammonium lignosulfonate solution  
 Ammonium nitrate, Urea solution (not containing Ammonia)  
 Ammonium polyphosphate solution  
 Ammonium sulfate solution  
 Ammonium thiosulfate solution  
 Sulfonated polyacrylate solutions<sup>2</sup>  
 Calcium bromide solution  
 Calcium chloride solution  
 Calcium lignosulfonate solution  
 Caramel solutions  
 Clay slurry  
 Corn syrup  
 Dextrose solution  
 2,4-Dichlorophenoxyacetic acid,  
 Diethanolamine salt solution  
 2,4-Dichlorophenoxyacetic acid,  
 Trisopropanolamine salt solution<sup>2</sup>  
 Diethanolamine salt of 2,4-  
 Dichlorophenoxyacetic acid solution  
 Diethylenetriamine pentaacetic acid,  
 pentasodium salt solution  
 Dodecyl diphenyl ether disulfonate solution  
 Drilling brine (containing Calcium, Potassium, or Sodium salts)  
 Drilling brine (containing Zinc salts)  
 Drilling mud (low toxicity) (*if non-flammable or non-combustible*)  
 Ethylenediaminetetraacetic acid,  
 tetrasodium salt solution  
 Ethylene-Vinyl acetate copolymer emulsion  
 Ferric hydroxyethylethylenediamine triacetic acid, trisodium salt solution<sup>2</sup>  
 Fish solubles (*water based fish meal extracts*)  
 Fructose solution  
 Fumaric adduct of Rosin, water dispersion  
 Hexamethylenediamine adipate solution  
 N-(Hydroxyethyl)ethylene diamine triacetic acid, trisodium salt solution  
 Kaolin clay slurry  
 Latex, liquid synthetic

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Lignin liquor  
 Liquid Streptomyces solubles  
 l-Lysine solution  
 N-Methylglucamine solution  
 Naphthenic acid, sodium salt solution  
 Potassium chloride solution  
 Potassium thiosulfate solution  
 Rosin soap (disproportionated) solution  
 Sewage sludge, treated  
 Sodium alkyl sulfonate solution  
 Sodium hydrogen sulfite solution  
 Sodium lignosulfonate solution  
 Sodium polyacrylate solution<sup>2</sup>  
 Sodium salt of Ferric hydroxyethylethylenediamine triacetic acid solution  
 Sodium silicate solution<sup>2</sup>  
 Sodium sulfide solution  
 Sodium sulfite solution  
 Sodium tartrates, Sodium succinates solution  
 Sulfonated polyacrylate solutions<sup>2</sup>  
 Tall oil soap (disproportionated) solution  
 Tetrasodium salt of EDTA solution  
 Titanium dioxide slurry  
 Triisopropanolamine salt of 2,4-Dichlorophenoxyacetic acid solution  
 Urea, Ammonium nitrate solution (not containing Ammonia)  
 Urea, Ammonium phosphate solution  
 Urea solution  
 Vegetable protein solution (hydrolysed)  
 Water

FOOTNOTES TO TABLE II

<sup>1</sup>Because of very high reactivity or unusual conditions of carriage or potential compatibility problems, this product is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (G-MSO), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593-0001. Telephone (202) 372-1425.

<sup>2</sup>See Appendix I—Exceptions to the Chart.

[CGD 88-100, 54 FR 40012, Sept. 29, 1989]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting Table II to part 150, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.fdsys.gov](http://www.fdsys.gov).

APPENDIX I TO PART 150—EXCEPTIONS TO THE CHART

(a). The binary combinations listed below have been tested as prescribed in Appendix III and found not to be dangerously reactive. These combinations are exceptions to the Compatibility Chart (Figure 1) and may be stowed in adjacent tanks.

Member of reactive group	Compatible with
Acetone (18) .....	Diethylenetriamine (7)
Acetone cyanohydrin (0) .....	Acetic acid (4)

Member of reactive group	Compatible with
Acrylonitrile (15) .....	Triethanolamine (8)
1,3-Butylene glycol (20) .....	Morpholine (7)
1,4-Butylene glycol (20) .....	Ethylamine (7)
gamma-Butyrolactone (0) .....	Triethanolamine (8)
Caustic potash, 50% or less (5).	N-Methyl-2-pyrrolidone (9)
Caustic soda, 50% or less (5)	Isobutyl alcohol (20)
	Ethyl alcohol (20)
	Ethylene glycol (20)
	Isopropyl alcohol (20)
	Methyl alcohol (20)
	iso-Octyl alcohol (20)
Caustic soda, 50% or less (5)	Butyl alcohol (20)
	tert-Butyl alcohol, Methanol mixtures
	Decyl alcohol (20)
	iso-Decyl alcohol (20)
	Diacetone alcohol (20)
	Diethylene glycol (40)
	Dodecyl alcohol (20)
	Ethyl alcohol (20)
	Ethyl alcohol (40%, whiskey) (20)
	Ethylene glycol (20)
	Ethylene glycol, Diethylene glycol mixture (20)
	Ethyl hexanol (Octyl alcohol) (20)
	Methyl alcohol (20)
	Nonyl alcohol (20)
	iso-Nonyl alcohol (20)
	Propyl alcohol (20)
	iso-Propyl alcohol (20)
	Propylene glycol (20)
	Sodium chlorate solution (0)
	iso-Tridecanol (20)
tert-Dodecanethiol (0) .....	Acrylonitrile (15)
	Diisodecyl phthalate (34)
	Methyl ethyl ketone (18)
	iso-Nonyl alcohol (20)
	Perchloroethylene (36)
	iso-Propyl alcohol (20)
	Tall oil, crude
	Tall oil, fatty acid (34)
Dodecyl and Tetradecylamine mixture (7).	Butyl alcohol (20)
Ethylenediamine (7) .....	tert-Butyl alcohol (20)
	Butylene glycol (20)
	Creosote (21)
	Diethylene glycol (40)
	Ethyl alcohol (20)
	Ethylene glycol (20)
	Ethyl hexanol (20)
	Glycerine (20)
	Isononyl alcohol (20)
	Isophorone (18)
	Methyl butyl ketone (18)
	Methyl iso-butyl ketone (18)
	Methyl ethyl ketone (18)
	Propyl alcohol (20)
	Propylene glycol (20)
Oleum (0) .....	Hexane (31)
	Dichloromethane (36)
	Perchloroethylene (36)
1,2-Propylene glycol (20) .....	Diethylenetriamine (7)
	Polyethylene polyamines (7)
	Triethylenetetramine (7)
Sodium dichromate, 70% (0)	Methyl alcohol (20)
Sodium hydrosulfide solution (5).	Methyl alcohol (20)
	Iso-Propyl alcohol (20)
Sulfuric acid (2) .....	Coconut oil (34)

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Member of reactive group	Compatible with
	Coconut oil acid (34) Palm oil (34) Tallow (34)
Sulfuric acid, 98% or less (2)	Choice white grease tallow (34)

(b). The binary combinations listed below have been determined to be dangerously reactive, based on either data obtained in the literature or on laboratory testing which has been carried out in accordance with procedures prescribed in Appendix III. These combinations are exceptions to the Compatibility Chart (Figure 1) and may not be stowed in adjacent tanks.

Acetone cyanohydrin (0) is not compatible with Groups 1-12, 16, 17 and 22.

Acrolein (19) is not compatible with Group 1, Non-Oxidizing Mineral Acids.

Acrylic acid (4) is not compatible with Group 9, Aromatic Amines.

Acrylonitrile (15) is not compatible with Group 5 (Caustics).

Alkylbenzenesulfonic acid (0) is not compatible with Groups 1-3, 5-9, 15, 16, 18, 19, 30, 34, 37, and strong oxidizers.

Allyl alcohol (15) is not compatible with Group 12, Isocyanates.

Alkyl(C7-C9) nitrates (34) is not compatible with Group 1, Non-oxidizing Mineral Acids.

Aluminum sulfate solution (43) is not compatible with Groups 5-11.

Ammonium bisulfite solution (43) is not compatible with Groups 1, 3, 4, and 5.

Benzenesulfonyl chloride (0) is not compatible with Groups 5-7, and 43.

1,4-Butylene glycol (20) is not compatible with Caustic soda solution, 50% or less (5). gamma-Butyrolactone (0) is not compatible with Groups 1-9.

C9 Resinfeed (DSM) (32) is not compatible with Group 2, Sulfuric acid.

Carbon tetrachloride (36) is not compatible with Tetraethylenepentamine or Triethylenetetramine, both Group 7, Aliphatic amines.

Catoxid feedstock (36) is not compatible with Group 1, 2, 3, 4, 5, or 12.

Caustic soda solution, 50% or less (5) is not compatible with 1,4-Butylene glycol (20).

1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one (18) is not compatible with Group 5 (Caustics) or 10 (Amides).

Crotonaldehyde (19) is not compatible with Group 1, Non-Oxidizing Mineral Acids.

Cyclohexanone, Cyclohexanol mixture (18) is not compatible with Group 12, Isocyanates.

2,4-Dichlorophenoxyacetic acid, Triisopropanolamine salt solution (43) is not compatible with Group 3, Nitric Acid.

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2,4-Dichlorophenoxyacetic acid, Dimethylamine salt solution (0) is not compatible with Groups 1-5, 11, 12, and 16.

Diethylenetriamine (7) is not compatible with 1,2,3-Trichloropropane, Group 36, Halogenated hydrocarbons.

Dimethyl hydrogen phosphite (34) is not compatible with Groups 1 and 4.

Dimethyl naphthalene sulfonic acid, sodium salt solution (34) is not compatible with Group 12, Formaldehyde, and strong oxidizing agents.

Dodecylbenzenesulfonic acid (0) is not compatible with oxidizing agents and Groups 1, 2, 3, 5, 6, 7, 8, 9, 15, 16, 18, 19, 30, 34, and 37.

Ethylenediamine (7) and Ethyleneamine EA 1302 (7) are not compatible with either Ethylene dichloride (36) or 1,2,3-Trichloropropane (36).

Ethylene dichloride (36) is not compatible with Ethylenediamine (7) or Ethyleneamine EA 1302 (7).

Ethyldiene norbornene (30) is not compatible with Groups 1-3 and 5-8.

2-Ethyl-3-propylacrolein (19) is not compatible with Group 1, Non-Oxidizing Mineral Acids.

Ethyl tert-butyl ether (41) is not compatible with Group 1, Non-oxidizing mineral acids.

Ferric hydroxyethylethylenediamine triacetic acid, Sodium salt solution (43) is not compatible with Group 3, Nitric acid.

Fish oil (34) is not compatible with Sulfuric acid (2).

Formaldehyde (over 50%) in Methyl alcohol (over 30%) (19) is not compatible with Group 12, Isocyanates.

Formic acid (4) is not compatible with Furfural alcohol (20).

Furfuryl alcohol (20) is not compatible with Group 1, Non-Oxidizing Mineral Acids and Formic acid (4).

2-Hydroxyethyl acrylate (14) is not compatible with Group 5, 6, or 12.

Isophorone (18) is not compatible with Group 8, Alkanolamines.

Magnesium chloride solution (0) is not compatible with Groups 2, 3, 5, 6 and 12.

Mesityl oxide (18) is not compatible with Group 8, Alkanolamines.

Methacrylonitrile (15) is not compatible with Group 5 (Caustics).

Methyl tert-butyl ether (41) is not compatible with Group 1, Non-oxidizing Mineral Acids.

NIAX POLYOL APP 240C (0) is not compatible with Group 2, 3, 5, 7, or 12.

o-Nitrophenol (0) is not compatible with Groups 2, 3, and 5-10.

Octyl nitrates (all isomers), see Alkyl(C7-C9) nitrates.

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Oleum (0) is not compatible with Sulfuric acid (2) and 1,1,1-Trichloroethane (36).  
Phthalate based polyester polyol (0) is not compatible with group 2, 3, 5, 7 and 12.  
Polyglycerine, Sodium salts solution (20) is not compatible with Groups 1, 4, 11, 16, 17, 19, 21 and 22.  
Propylene, Propane, MAPP gas mixture (containing 12% or less MAPP gas) (30) is not compatible with Group 1 (Non-oxidizing mineral acids), Group 36 (Halogenated hydrocarbons), nitrogen dioxide, oxidizing materials, or molten sulfur.  
Sodium acetate, Glycol, Water mixture (1% or less Sodium hydroxide) (34) is not compatible with Group 12 (Isocyanates).  
Sodium chlorate solution (50% or less) (0) is not compatible with Groups 1-3, 5, 7, 8, 10, 12, 13, 17 and 20.  
Sodium dichromate solution (70% or less) (0) is not compatible with Groups 1-3, 5, 7, 8, 10, 12, 13, 17 and 20.  
Sodium dimethyl naphthalene sulfonate solution (34) is not compatible with Group 12, Formaldehyde and strong oxidizing agents.  
Sodium hydrogen sulfide, Sodium carbonate solution (0) is not compatible with Groups 6 (Ammonia) and 7 (Aliphatic amines).  
Sodium hydrosulfide (5) is not compatible with Groups 6 (Ammonia) and 7 (Aliphatic amines).  
Sodium hydrosulfide, Ammonium sulfide solution (5) is not compatible with Groups 6 (Ammonia) and 7 (Aliphatic amines).  
Sodium polyacrylate solution (43) is not compatible with Group 3, Nitric Acid.  
Sodium silicate solution (43) is not compatible with Group 3, Nitric Acid.  
Sodium sulfide, hydrosulfide solution (0) is not compatible with Groups 6 (Ammonia) and 7 (Aliphatic amines).  
Sodium thiocyanate (56% or less) (0) is not compatible with Groups 1-4.  
Sulfonated polyacrylate solution (43) is not compatible with Group 5 (Caustics).  
Sulfuric acid (2) is not compatible with Fish oil (34), or Oleum (0).  
Tall oil fatty acid (*Resin acids less than 20%*) (34) is not compatible with Group 5, Caustics.  
Tallow fatty acid (34) is not compatible with Group 5, Caustics.  
Tetraethylenepentamine (7) is not compatible with Carbon tetrachloride, Group 36, Halogenated hydrocarbons.  
1,2,3-Trichloropropane (36) is not compatible with Diethylenetriamine, Ethylenediamine, Ethyleaneamine EA 1302, or Triethylenetetramine, all Group 7, Aliphatic amines.  
1,1,1-Trichloroethane (36) is not compatible with Oleum (0).

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Trichloroethylene (36) is not compatible with Group 5, Caustics.

Triethylenetetramine (7) is not compatible with Carbon tetrachloride, or 1,2,3-Trichloropropane, both Group 36, Halogenated hydrocarbons.

Triethyl phosphite (34) is not compatible with Groups 1, and 4.

Trimethyl phosphite (34) is not compatible with Groups 1 and 4.

1,3,5-Trioxane (41) is not compatible with Group 1 (non-oxidizing mineral acids) and Group 4 (Organic acids).

[CGD 88-100, 54 FR 40012, Sept. 29, 1989 as amended by CGD 88-100, 55 FR 17277, Apr. 24, 1990; CDG 92-100, 59 FR 17026, Apr. 11, 1994; CGD 94-902, 60 FR 34043, June 29, 1995; CGD 95-900, 60 FR 34050, June 29, 1995; USCG 2000-7079, 65 FR 67182, Nov. 8, 2000]

### APPENDIX II TO PART 150—EXPLANATION OF FIGURE 1

*Definition of a hazardous reaction*— As a first approximation, a mixture of two cargoes is considered hazardous when, under specified condition, the temperature rise of the mixture exceeds 25 °C or a gas is evolved. It is possible for the reaction of two cargoes to produce a product that is significantly more flammable or toxic than the original cargoes even though the reaction is non-hazardous from temperature or pressure considerations, although no examples of such a reaction are known at this time.

*Chart format*— There are different degrees of reactivity among the various cargoes. Many of them are relatively non-reactive: For example, aromatic hydrocarbons or paraffins. Others will form hazardous combinations with many groups: For example, the inorganic acids.

The cargo groups in the compatibility chart are separated into two categories: 1 through 22 are “Reactive Groups” and 30 through 43 are “Cargo Groups”. Left unassigned and available for future expansion are groups 23 through 29 and those past 43. Reactive Groups contain products which are chemically the most reactive; dangerous combinations may result between members of different Reactive Groups and between members of Reactive Groups and Cargo Groups. Products assigned to Cargo Groups, however, are much less reactive; dangerous combinations involving these can be formed only with members of certain Reactive Groups. Cargo Groups do not react hazardously with one another.

*Using the Compatibility Chart*— The following procedure explains how the compatibility chart should be used to find compatibility information:

- (1) Determine the group numbers of the two cargoes by referring to the alphabetical

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listing of cargoes and the corresponding groups (Table I). Many cargoes are listed under their parent names; unless otherwise indicated, isomers or mixtures of isomers of a particular cargo are assigned to the same group. For example, to find the group number for Isobutyl Alcohol, look under the parent name Butyl Alcohol. Similarly, the group number for para-Xylene is found under the entry Xylene. If a cargo cannot be found in this listing, contact the Coast Guard for a group determination (see § 150.140).

(2) If both group numbers are between 30 and 43 inclusive, the products are compatible and the chart need not be used.

(3) If both group numbers do not fall between 30 and 43 inclusive, locate one of the numbers on the left of the chart (Cargo Groups) and the other across the top (Reactive Groups). (Note that if a group number is between 30 and 43, it can only be found on the left side of the chart.) The box formed by the intersection of the column and row containing the two numbers will contain one of the following:

(a) Blank—The two cargoes are compatible.

(b) "X"—The two cargoes are not compatible.

(Note that reactivity may vary among the group members. Refer to Table I or Table II to find whether the products in question are referenced by a footnote which indicates that exceptions exist and are listed in Appendix I. Unless the combination is specifically mentioned in Appendix I, it is compatible.)

[CGD 75-59, 45 FR 70263, Oct. 23, 1980, as amended by CGD 83-047, 50 FR 33046, Aug. 16, 1985]

**EXAMPLES**

Combination	Groups	Compatible
Butyraldehyde/Acetic Acid .....	19/4	Yes.
Allyl Alcohol/Toluene Diisocyanate ...	15/12	No.
Decene/Ethyl Benzene .....	30/32	Yes.
Ethanamine/Acetone .....	8/18	Yes.
Ammonia/Dimethylformamide .....	6/10	No.

**APPENDIX III TO PART 150—TESTING PROCEDURES FOR DETERMINING EXCEPTIONS TO THE CHART****EXPERIMENTAL PROCEDURE FOR EVALUATING BINARY CHEMICAL REACTIVITY**

*General safety precautions*—Chemical reactivity tests have, by their nature, serious potential for injuring the experimenter or destroying equipment. The experimenter should 1) have knowledge of the magnitude of the reactivity to be expected, 2) use adequate facilities and protective equipment to prevent injury from splatter of materials or release of fumes, and 3) start on a small scale

so that unexpected reactions can be safely contained. All tests should be performed in a well-ventilated laboratory hood provided with shields.

*Testing chemicals other than liquids*—The procedure outlined below was developed for chemicals which are liquids at ambient temperatures. If one or both chemicals are normally shipped at elevated temperatures, the same procedure may be followed except the chemicals are tested at their respective shipping temperatures and the oil bath in Step 3 is maintained at a level 25 °C above the higher temperature. This information is then indicated on the data sheet. If one of the chemicals is a gas at ambient temperatures, consult the Coast Guard for additional instructions before proceeding with the compatibility test.

**Step 1**

**Objective**—To determine if the test chemicals react violently and present a safety hazard in further tests.

**Procedure**—Place 0.5ml of one (A) of the test chemicals in a 25×150mm test tube. Clamp the test tube to a stand behind a safety shield (in a hood). Carefully add from a dropper 0.5ml of the other substance (B). Shake to induce mixing. If no immediate reaction occurs, retain the mixture for at least 10 minutes to check for a delayed reaction.

**Results**—If a violent reaction occurs, such as sputtering, boiling of reactants or release of fumes, record the results on the Data Sheet (appendix IV) and do not proceed to Step 2. If no reaction or a minor reaction occurs, proceed to Step 2.

**Step 2**

**Objective**—To determine the heat of reaction of two chemicals on mixing under specified conditions.

**Procedure**—These separate mixes of the proposed binary combination will be tested. These are 2 ml : 18 ml, 10 ml : 10 ml, and 18 ml : 2 ml, respectively, to result in a final mixture of about 20 ml in each case.

A reference-junctioned thermocouple is prepared by inserting two lengths of 20 gauge or finer iron-constantan or chromelalumel duplex thermocouple wire into glass capillary sheaths. The common wire of each probe is joined, while the other wire of each is connected to a strip-chart recorder. The thermocouple probe which produces a negative pen deflection upon warming is the reference junction and is placed in a test tube of water at ambient laboratory temperature. The other probe is placed near the bottom of a Dewar flask of about 300ml capacity, such that the thermocouple will be below the surface of the test mixture. The Dewar flask is equipped with a magnetic stirrer having a stirring bar coated with an inert material such as a fluorinated hydrocarbon.

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Start the temperature recorder and stirrer. Deliver the test chemicals to the Dewar Flask simultaneously from separate graduated syringes. If an exothermic reaction occurs, continue the test until the maximum temperature is reached and begins to subside. If no apparent reaction occurs, continue the test for at least 30 minutes to check for a delayed reaction. Stop agitation and observe the mixture at five-minute intervals to determine if the mixture is miscible, if gases are evolved, or if other visible changes occur. In the interest of safety, a mirror can be used for these observations. Repeat the above test for the other mixture combinations.

Results—Record the results in the appropriate places on the Data Sheet. If no reaction occurs or if the temperature rise is less than 25 °C, proceed to Step 3. If the observed temperature rise exceeds 25 °C or gases are evolved, do not proceed to Step 3.

**Step 3**

Objective—To determine if exothermic reactions occur at temperatures up to 50 °C.

Procedure—If a non-hazardous reaction occurred in Step 2, the ratio of chemicals which resulted in the greatest temperature rise will be tested. Fresh chemicals will be used with a total volume for this test of

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about 10ml (a ratio of 1ml:9ml, 5ml:5ml, or 9ml:1ml). If no reaction was observed in Step 2, use a ratio of 5ml:5ml. Using the thermocouple prepared for Step 2, insert the reference probe into a 25×150mm test tube containing 10ml of water. Place the other probe into an empty test tube. Start the temperature recorder and add the two chemicals of the combination, one at a time, to the empty test tube. Lower the two test tubes into an oil bath maintained at 50 ±2 °C. Hold the samples in the oil bath until the maximum temperature differential is recorded, and in all cases at least 15 minutes. Observe the test mixture to determine if gases are evolved or if other visible changes occur. Follow prescribed safety precautions.

Results—Record the maximum differential temperature measured, the time required to reach this temperature, and any other observations in the proper space on the Data Sheet.

Send a copy of the Data Sheet for each binary chemical mixture tested to: Commandant (G-MSO), U.S. Coast Guard, Washington, DC 20593-0001.

[CGD 75-59, 45 FR 70263, Oct. 23, 1980, as amended by CGD 82-063b, 48 FR 4782, Feb. 3, 1983; CGD 83-047, 50 FR 33046, Aug. 16, 1985; CGD 88-070, 53 FR 34535, Sept. 7, 1988; CGD 96-041, 61 FR 50731, Sept. 27, 1996]

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APPENDIX IV TO PART 150—DATA SHEET

**CHEMICAL REACTIVITY TEST DATA**

Chemicals: A \_\_\_\_\_ B \_\_\_\_\_

Synonyms: \_\_\_\_\_

Formula: \_\_\_\_\_

Description of Products:

A	B

Manufacturer

Sample Source

Composition (by weight %)

Inhibitors or Stabilizers

Deviations from Prescribed Method  
(including special equipment)

--	--

Step Number 1

Products miscible? \_\_\_\_\_ Gases evolved? \_\_\_\_\_

Other Observations:

Step Number 2

A/B Ratio:

	2/18	10/10	18/2
Initial Temperature			
Maximum ΔT			
Time to reach Max. Temp.			
Products miscible?			
Gases evolved?			
Other Observations			

Products miscible?

Gases evolved?

Other Observations

Size of Dewar Flask (inside measurements): Width \_\_\_\_\_ mm

Height \_\_\_\_\_ mm

Step Number 3

A/B Ratio

Oil Bath Temperature

Maximum ΔT

Time to reach Max. Temp.

Gases evolved?

Other Observations


Date of Test: \_\_\_\_\_

Submitting Organization: \_\_\_\_\_

Test Data Approved By: \_\_\_\_\_

**PART 151—BARGES CARRYING BULK LIQUID HAZARDOUS MATERIAL CARGOES****Subpart 151.01—General**

Sec.

- 151.01-1 Applicability.
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- 151.01-5 [Reserved]
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